

Modern management of fibroids

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Abstract

Uterine fibroids are present in approximately 20% of women of reproductive age and can be associated with significant morbidity including menstrual disturbance, pressure symptoms and in some cases reduced reproductive potential. Although some women remain asymptomatic any of the above presentations may be an indication for treatment. Many management options exist including conservative, treatment with medications, radiological interventions and surgery. Interventions can be fertility sparing whereas some are contraceptive, whilst others can result in permanent infertility. Ultimately optimal management should be governed by presenting symptoms, size and location of fibroids, as well as the desire for fertility and local expertise.

Keywords fibroids; hysterectomy; leiomyomas; menorrhagia; subfertility; uterine myomas; uterine myomectomy

Introduction

Uterine fibroids (myomas, leiomyomas) are common. These benign tumours of the uterine smooth muscle are thought to be present in up to 20% of women of reproductive age (and perhaps up to 60% of women of African descent). Uterine fibroids are thought to result from increased mitotic divisions within the myometrium under the influence of oestrogen and progesterone, however, what initiates fibroid growth is unclear. Symptoms depend on size and position of the fibroids, but it is thought that between 20 and 50% of women are symptomatic of their fibroids. Symptoms include bleeding disturbances (often heavy, prolonged, frequent and unpredictable bleeds) and pressure symptoms (bladder and bowel symptoms, bloating, chronic pelvic pain and dyspareunia). Bleeding disturbances are more pathognomonic of submucosal or intramural fibroids which protrude into the endometrial cavity, whereas pressure symptoms are dependent on fibroid size and the extent to which these fibroids encroach on the peritoneal cavity and the structures within. Importantly over 50% of fibroids are asymptomatic, and in many symptoms are mild. As such, the majority of patients may not require treatment.

The role of fibroids in subfertility remains controversial. Systematic reviews have suggested reduced livebirth rates in women with both submucosal and intramural fibroids

undergoing assisted conception treatment and those attempting natural conception. However some dispute this association. Evidence that fibroid removal improves fertility outcomes is more limited as no randomised control trials exist. However evidence from case-controls suggests that fibroid removal by myomectomy increases pregnancy rates in those with submucosal fibroids, however evidence to support removal of intramural fibroids is less conclusive. Despite the conflicting evidence, since fibroids are commonly associated with obstetric complications, this may provide reason enough to remove fibroids preconceptually.

Fibroid management

Fibroid management options can broadly be divided into medical, surgical and more recently radiological options. Each has its advantages and disadvantages and will appeal to a different subset of patients. Ultimately decisions regarding whether and how to treat will depend on symptoms reported, size, number and position of the fibroids, the willingness of a patient to undergo surgery, plans for future fertility and local expertise. [Table 1](#) summarizes the indications, advantages and disadvantages of each management option together with symptomatic effects.

Medical management

Levonorgestrel releasing intrauterine system (LNG-IUS) (for heavy menstrual bleeding only)

The LNG-IUS is also well established in the management of menorrhagia, so much so that it is now recommended as first line treatment in the management of menorrhagia. Its effectiveness in the context of uterine pathology such as fibroids is less clear. One longitudinal study has reported significant reductions in menstrual blood loss and increased mean Haemoglobin concentration within three months of insertion of the LNG-IUS, in women with a uterine size of 12 weeks or less and one or more fibroids greater than 1.5 cm in diameter. There was also a significant reduction in fibroid volume within 6 months of insertion. Reductions in menstrual blood loss were also reported by another smaller study, with similar inclusion criteria, however at 12 months the majority of patients with the LNG-IUS still reported symptoms of menorrhagia, leading the authors to question the effectiveness of the LNG-IUS in the fibroid setting. We also need to consider the fact that fibroids are associated with increased rates of discontinuation of the LNG-IUS and difficulties at the time of fitting (e.g. expulsion), it is also contraceptive and therefore not an option for women wishing to conceive.

Gonadotrophin releasing hormone agonists (GnRH agonists)

GnRH agonists are synthetic analogues of GnRH which compete for GnRH receptors and, after an initial flare effect, inhibit the hypothalamic-pituitary-ovarian axis. The resulting drop in circulating oestrogen levels is associated with fibroid degeneration resulting in shrinkage of the fibroid. There is strong evidence that if given 3–4 months prior to myomectomy or hysterectomy GnRHa is associated with reduced fibroid volume, correction of pre-operative anaemia, reductions in intraoperative blood loss, reduced midline incisions and increased vaginal approach to surgery where appropriate. The benefits for laparoscopic myomectomy are less clear. GnRH agonists have been used outside of

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Fibroid management options

	Indication	Advantages	Disadvantages	Therapeutic effects		
				Menstrual symptoms	Fibroid size	Fertility
LNG-IUS	Menorrhagia	Reversible	May be difficult to fit / expelled if large fibroids.	Reduced menstrual blood loss	Some possible reduction	Contraceptive
GnRH agonists	Menorrhagia Pressure symptoms Pre-surgery	Reduce intraoperative blood loss and midline incisions	Hypoestrogenic side effects limit duration of use Fibroid re-growth shortly after cessation of treatment	Usually induces amenorrhoea	Reduction in fibroid volume after 3 months	Inhibits HPO axis -temporary reduction in fertility
SPRMs	Menorrhagia Pressure symptoms Pre-surgery	Oestrogen levels maintained Few side effects	One month break required between each course	Reduced menstrual blood loss	Reduction in fibroid volume after 3 months	Insufficient evidence to confirm safety
Uterine Artery Embolisation	Menorrhagia Pressure symptoms	Quick recovery Short hospital stay	High rates of minor complications post procedure (pain, post-embolisation syndrome) High rates of subsequent intervention	Reduced menstrual blood loss	Fibroid shrinkage	Insufficient evidence of safety
MRI focused High intensity ultrasound	Menorrhagia Pressure symptoms	Quick recovery Short hospital stay	High rates of subsequent intervention Not recommended for pedunculated fibroids or where uterine size > 24 weeks	Reduced menstrual blood loss	Fibroid shrinkage	Insufficient evidence of safety
Open myomectomy	Menorrhagia Pressure symptoms	More complete fibroid clearance	Long recovery time. Longer hospital stays.	Reduced menstrual blood loss	Fibroid removal	Livebirths reported in literature.
Laparoscopic myomectomy	Menorrhagia Pressure symptoms	Quicker recovery times, shorter hospital stays. Reduced mean blood loss.	Requires significant skill and expertise Less complete fibroid removal Not possible for very large or multiple (>5) fibroids Concerns over morcellation and cancer spread	Reduced menstrual blood loss	Fibroid removal	Livebirths reported in literature.
Hysteroscopic myomectomy	Menorrhagia	Shorter operating times, shorter hospital stays, quicker recovery. Fewer intraoperative complications	Only possible for submucosal fibroids Can be associated with intrauterine adhesion formation	Reduced menstrual blood loss	Not appropriate for fibroids causing pressure symptoms	Associated with improved obstetric outcomes despite concerns over adhesion formation

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