



Uterine Myomas: Recent Advances in their Treatment

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Editorial

Nowadays, uterine myomas represent a very common clinical entity. Approximately 20%-40% of the women in the reproductive age have uterine myomas [1,2]. However, in menopause there is a significant decrease in the incidence of uterine myomas [2,3]. A lot of patients with uterine myomas have no symptoms, because these tumors are usually asymptomatic [1]. Nevertheless, patients with uterine myomas may have: abnormal uterine bleeding, pelvic pain, pressure complaints, infertility and pregnancy-related complications [1,3,4].

There are many treatment protocols for patients with uterine myomas [5-7]. The most popular among them, is the surgical intervention (myomectomy, hysterectomy) with preoperative preparation with GnRH analogues. In sharp contrast, the non-surgical techniques (uterine artery embolization, focused ultrasound surgery) are significantly less popular, although they have promising results in carefully selected patients [1,5,8-15]. To begin with, the role of myomectomy in nulliparous patients with uterine myomas is well established. Myomectomy is the treatment of choice especially in patients who desire fertility preservation [4,9,13,16]. The main surgical technique in myomectomy is the complete removal of all visible uterine myomas and the appropriate repair of uterine defects [4,16].

There are various degrees of difficulty regarding the entire surgical procedure. Moreover, there is a wide range of perioperative complications including: bleeding, infection and trauma in adjacent organs. Sometimes we cannot avoid hysterectomy, especially in cases with large uterine myomas and severe intraoperative bleeding [4]. It is interesting to note, that the preoperative preparation with GnRH analogues for 3 to 4 months, offers significant benefits in patients with large uterine myomas. This is mainly because GnRH analogues reduce myomas size, total uterine volume and intraoperative blood loss [1,5,6,8,10]. In this light, myomectomy becomes an easier, safer and less time consuming procedure [8,10,13].

The myomectomy can be performed with laparotomy, mini laparotomy, laparoscopy and hysteroscopy [4-6,15]. Among them,

laparotomy and mini laparotomy are the most common surgical approaches. In contrast, laparoscopy is significantly more difficult and time consuming and requires special surgical skills in suturing [4,17-19]. Likewise, hysteroscopy is the treatment of choice for submucosal uterine myomas [1,4]. On the other hand, hysterectomy remains the treatment of choice especially in symptomatic perimenopausal women with multiple and large uterine myomas and completed childbearing [1,5,16]. It is a more difficult operation and associated with a big variety of complications including: bleeding, infection and trauma in adjacent organs [1,4].

The hysterectomy can be performed with laparotomy, mini laparotomy and laparoscopy [4-6,15]. However, laparotomy and mini laparotomy are the most common surgical approaches [4,17-19]. Recent years, uterine artery embolization (UAE) is a widely acceptable non-surgical technique in selected patients with uterine myomas [7]. It is a minimal invasive procedure that uses transcatheter common femoral artery approach to reduce uterine blood supply [7,11]. As a result, UAE causes irreversible ischemia and leads to necrosis and shrinkage of uterine myomas [5-7,11,20]. It is based on well-established techniques for treating pelvic bleeding and it was first described in 1976 in patients with gynecological malignancies and severe uterine bleeding [21,22]. In current clinical practice, UAE represents an acceptable alternative to hysterectomy and myomectomy [5-7,21,23].

Patients who wish to preserve their uterus and avoid surgical operation and patients who refuse blood transfusion for health concerns or religious reasons, are eligible for UAE [4,5,23-27]. Likewise, patients with relevant co-morbidities (obesity, coronary artery disease) and increased risk for perioperative complications, are also candidates for UAE [5,6,21]. It is worth noting, that UAE results in shorter operative time, less intraoperative blood loss and less postoperative pain compared with surgical intervention. Similarly, there is an essential decrease in hospital stay and a quicker recovery and return to normal activities [24,26,28-32]. Moreover, there is a substantial improvement in general symptoms and in the quality of life [4,21,23,25,31].

The effect of UAE on ovarian reserve is not well-established [33]. However, follicle stimulating hormone (FSH) levels have no

significant differences between patients treated with UAE and patients underwent to hysterectomy [33]. A future pregnancy is feasible in patients treated with UAE [34,35]. However, there is an increased risk for obstetric complications (miscarriage, abnormal placentation, preterm labor, malpresentation and postpartum hemorrhage) [34-36]. In this case, it is recommended a close monitoring of the placental status [34]. Apart from that, magnetic resonance imaging-guided focused ultrasound surgery (MRgFUS) is another non-surgical technique in selected patients with uterine myomas. It is a hybrid technique and combines the capabilities of magnetic resonance imaging (MRI) with the therapeutic potential of focused ultrasound (FUS) [5,6,37,38]. More specifically, MRgFUS uses high intensity ultrasound waves and direct them into uterine myomas. In this way, the ultrasound energy penetrates soft tissue and produces well defined regions of protein denaturation, irreversible cell damage and coagulative necrosis [4,37,39].

It is interesting to see, that MRgFUS results in shorter operative time, and less postoperative pain compared with standard surgical intervention. Likewise, there is an essential decrease in hospital stay and a quicker recovery and return to daily activities [5,6,37,40,41]. Although pregnancy is possible in patients treated with MRgFUS, it is recommended a very careful ultrasound evaluation of the placental site and placental status to ensure appropriate care [42].

In conclusion, the surgical intervention remains the treatment of choice in patients with uterine myomas [4,9,13,16]. The non-surgical techniques (uterine artery embolization, focused ultrasound surgery) have shown promising results in carefully selected patients with uterine myomas, minimizing the need for the standard surgical operation [5-7]. However, in nulliparous patients and in patients who want to preserve future childbearing capability, myomectomy remains the treatment of choice [5-7,9].

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