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Management of Uterine Myomas: A Critical Update

Editorial

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Uterine myomas are benign, fibromuscular tumors.[1-3] They consist of clonal expansions of a single myometrial cell with various amounts of fibrous tissue.[1,2] They originate from smooth muscle cells of the uterus.[3] However, in some cases they originate from smooth muscle cells of uterine blood vessels.[3] Estrogen and progesterone appear to play a key role in the pathogenesis of uterine myomas.[1,2]

They diagnosed in 20%-40% of women during reproductive age.[1,3] Their incidence increase during reproductive age and decline in menopause.[1,2] Most patients with uterine myomas are asymptomatic.[3] However uterine myomas can cause various symptoms: abnormal uterine bleeding, pelvic pain, pressure complaints, infertility and pregnancy-related complications.[2-4]

The management of patients with uterine myomas remains controversial.[5] There are various treatment protocols that use: medical treatment (GnRH analogues), radiological intervention (focused ultrasound surgery, uterine artery embolization) or surgical intervention (myomectomy, hysterectomy).[3],[5-13] Recent advances in the nonsurgical management of uterine myomas have shown promising results simplifying or eliminating the need for surgical intervention in carefully selected patients.[5,7,9]

Stand-alone treatment with GnRH analogues results in temporary relief of symptoms.[8] However, GnRH analogues are expensive and have significant side-effects (bone demineralization, menopausal symptoms).[8] Moreover, uterine myomas return to their initial size within a few months of discontinuation of the treatment.[4],[6-8],[14] It is obvious that GnRH analogues cannot be used as stand-alone treatment.[5,7,8]

However, preoperative treatment with GnRH analogues for 3 to 4 months: improves hematocrit levels and reduces myomas size, total uterine volume and intraoperative blood loss.[3,6,8] This is very important especially in patients with large uterine myomas and/or anemia.[5]

Certainly, preoperative use of GnRH analogues makes myomectomy technically easier and less time consuming.[6,8,11] However, in some cases uterine myomas become softer with less distinct surgical planes.[4,8,11] That cause technical difficulties and increase intraoperative bleeding.[4,8] 11 Also there is increased risk of recurrence, as small uterine myomas recognized with difficulty during operation.[5,6,8]

Other agents with various degrees of success are: GnRH antagonists, selective estrogen receptor modulators (SERMs), aromatase inhibitors, selective progesterone receptor modulators (mifepristone, asnoprisinil), cabergoline, danazol and gestrinone.[4,8]

Magnetic resonance imaging-guided focused ultrasound surgery (MRgFUS) is a hybrid technique that combines the anatomic detail and thermal monitoring capabilities of magnetic resonance imaging (MRI) with the therapeutic potential of focused ultrasound (FUS).[15,16] More specifically, it uses high intensity ultrasound waves directed into a focal volume of uterine myoma.[4,15,17] The ultrasound energy penetrates soft tissue and produces well defined regions of protein denaturation, irreversible cell damage and coagulative necrosis.[4,15,17]

MRgFUS is a safe and effective technique and most patients are able to return to their normal activities in 1 day.[15,18,19] Pregnancy is possible in patients treated with MRgFUS.[20] However, they need careful ultrasound evaluation of placental site and placental status to ensure appropriate care.[20]

Uterine artery embolization (UAE) is a minimal invasive technique that use transcutaneous femoral artery approach, to block uterine blood supply.[9] During procedure, we usually use polyvinyl alcohol particles of trisacryl gelatin microspheres.[4,21] Embolization causes irreversible ischemia and leads to necrosis and shrinkage of uterine myomas.[9,22]

UAE is a safe and effective technique for appropriately selected women who wish to preserve their uterus.[4,21,23,24] It substantially improves symptoms and quality of life in the majority of patients.[4,21,23] Moreover, UAE results in shorter hospital stay and quicker return to normal activities.[24]

Although pregnancy is possible in patients treated with UAE, there is increased risk of obstetric complications (miscarriage, abnormal placentation, preterm labor, malpresentation and post-partum hemorrhage).[25-27]

Myomectomy remains the treatment of choice, in women who desire future fertility or wish uterine preservation.[4,7,11,28] The aim of myomectomy is to remove all visible uterine myomas and reconstruct uterine defects properly.[4,28] Rarely intraoperative complications, may lead to an unanticipated hysterectomy.[4]

Laparotomic myomectomy is a safe and effective approach for the treatment of uterine myomas.[4] However, it is associated with significant morbidity including excessive blood loss, infection and postoperative adhesions.[3,12,29,30]

Laparoscopic myomectomy is an alternative approach for the treatment of uterine myomas.[4,12] It is associated with fewer complications, shortened hospital stay and less disability.[4,10,12] However, it is a tedious operation especially in intramural uterine myomas and requires skills in suturing.[4,31,32] Also, many gynecologists are not skilled laparoscopists to perform laparoscopic myomectomy and uterine repair.[33]

Mini laparotomic myomectomy is an alternative to laparoscopic myomectomy for the treatment of uterine myomas.[5,13,33,34] Compared with laparoscopic myomectomy, it is technically easier.[5,13] It is associated with fewer complications, shortened hospital stay and less disability.[5,13] [35-39] Surgical technique is basically the same as in classical laparotomic myomectomy.[5,13,35]

Hysteroscopic myomectomy is a safe and effective approach for the treatment of submucosal uterine myomas.[3,4] It is associated with fewer complications and shortened hospital stay.[4,5]

Hysterectomy is the treatment of choice, in symptomatic perimenopausal women with multiple uterine myomas and completed childbearing.[3,5,28] It is associated with various complications.[3]

It is obvious that nonsurgical management of uterine myomas has shown promising results simplifying or eliminating the need for surgical intervention in carefully selected patients.[5] However, it is inappropriate for infertile women and for women wanting to preserve future childbearing capability.[5,7] For those women myomectomy remains the treatment of choice.[5,7,11]

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