Uterine fibroids, or leiomyoma, are benign tumors of the uterus that may cause severe pain, bleeding, and infertility. Fibroids affect a woman’s quality of life, as well as her fertility and obstetric outcomes. Fibroids affect approximately 35% to 77% of reproductive-age women, although the real prevalence is much higher because many fibroids may be asymptomatic. Nearing age 50, this likelihood may increase to 70% to 80% depending on the patient’s ethnicity. Of particular note, Peddada and colleagues found that fibroid growth rates declined for white women older...
than 35 years but did not decline for black women of the same age. Fibroids are a public health concern and have been estimated to cost the US health care system up to $34.4 billion per year.6

In this review, we examine the medical and surgical therapies that women and their providers may choose to treat uterine fibroids, paying particular attention to pregnancy rates and obstetric outcomes. When selecting a treatment, individual patient preferences should be taken into account, such as desire for future childbearing. The fibroid location, size, and number are essential considerations.

Aside from traditional surgical therapies such as hysterectomy and myomectomy, minimally invasive gynecologic surgeries, uterine artery embolization (UAE), and magnetic resonance–guided focused ultrasound (MRgFUS) are increasing in popularity. The preliminary data using these newer therapies are encouraging. However, patients should be counseled that any uterus-sparing technique has the potential for fibroid recurrence.

**FIBROIDS AND INFERTILITY**

Fibroids are present in 5% to 10% of infertile patients and may be the sole cause of infertility in 1% to 2.4%.7,8 Fibroids may cause infertility by obstructing the fallopian tubes and impairing gamete transport. It is now clear that the critical factor may be distortion of the endometrial cavity, causing abnormal endometrial receptivity, hormonal milieu, and altered endometrial development9,10 (see later). However, the issue of whether fibroids can be the sole cause of infertility has been poorly understood.7 This is because of the lack of prospective, randomized, and controlled studies separating out other infertility factors.8 A randomized and prospective study evaluating spontaneous conception in infertile women with and without fibroids was conducted by Bulletti and colleagues11 in 1999. The authors found a significant discrepancy in pregnancy rate for infertile women (11% with fibroids vs 25% without fibroids). Removing the fibroids increased the pregnancy rate from 25% to 42%. This study supports fibroids influence infertility.

**EFFECT OF FIBROIDS ON ASSISTED REPRODUCTIVE TECHNOLOGIES**

The relationship between fibroids and infertility has been elucidated through numerous studies on patients who used assisted reproductive technologies (ART), which have been summarized in several meta-analyses and systematic reviews.12–15 Although abnormal gamete transfer and blockage of fallopian tubes are circumvented by ART, fibroids may also compromise fertility by altering the endometrial receptivity,9,10 thus negatively affecting embryo implantation and lowering the chances for pregnancy.

Fibroid location is of critical importance in ART outcomes.7 Submucosal fibroids, in particular, significantly reduce implantation and pregnancy rates of ART. Submucosal fibroids that distort the uterine cavity have been found to carry a relative risk of 0.3 for pregnancy and 0.28 for implantation after ART,12,13,16 compared with infertile women without fibroids. Other authors have also demonstrated reduced success following ART with an odds ratio of 0.3 for conception and 0.3 for delivery in the presence of submucosal fibroids.14 The effect is not as pronounced for intramural fibroids with an odds ratio of 0.62 for implantation rate and 0.7 for delivery rate per transfer cycle.15 Similarly, Somigliana and colleagues14 determined an odds ratio of 0.8 for conception and 0.7 for delivery with intramural fibroids. Subserosal fibroids have negligible impact on fertility with ART.11,14
FIBROIDS AND PREGNANCY

The reported incidence of fibroids in pregnancy ranges from 0.1% to 10.7% of all pregnancies.\textsuperscript{17–19} A study by De Vivo and colleagues\textsuperscript{20} reported that 71.4% of fibroids grew during the first and second trimesters, whereas 66.6% grew between the second and third trimesters. Fibroids during pregnancy are more likely to be encountered in patients who are 35 years of age and older, nulliparous, or African American.\textsuperscript{14,18,21} Although most pregnancies with fibroids are uneventful, fibroids increase the risk of pregnancy complications.

During pregnancy, fibroids may grow quickly, causing intense pain. However, fibroid regression after live birth has been demonstrated in 72% of women, with a greater than 50% reduction in fibroid volume between early gestation and 3 to 6 months postpartum.\textsuperscript{22} Women who had a miscarriage or used progestins after delivery experienced less fibroid regression,\textsuperscript{22} but this difference was not present in women who delivered by cesarean, used other hormonal contraceptives, or breastfed.

A patient with fibroids who is considering pregnancy should be evaluated with a pelvic examination and an ultrasound to delineate the location and size of any fibroid(s). For patients pursuing assisted reproduction, a preconception saline infusion sonogram can be extremely helpful in such cases to identify submucosal fibroids.\textsuperscript{4,7} Alternatively, an office hysteroscopy can be used to assess the endometrial cavity. Once a patient becomes pregnant, determining the fibroid location relative to the placenta and cervical canal may be helpful in assessing the risk of placental irregularities.

FIBROIDS AND OBSTETRIC OUTCOMES

Complications occur in approximately 10% to 40% of pregnancies in the presence of fibroids.\textsuperscript{23,24} Fibroids may contribute to miscarriage, cesarean section, premature labor, malpresentation of the fetus, and postpartum hemorrhage (Table 1). Other uncommon complications include pelvic pain caused by red or carneous degeneration of the fibroid, low Apgar scores in the neonate, renal failure, fetal limb anomalies, and hypercalcemia.\textsuperscript{25} The risk of developing complications during pregnancy increases if the fibroids are greater than 3 cm. However, women with fibroids larger than 10 cm can achieve vaginal delivery approximately 70% of the time.\textsuperscript{18}

### Table 1

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Increased Risk with Fibroids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preterm labor</td>
<td>1.0–4.0</td>
</tr>
<tr>
<td>Malpresentation</td>
<td>1.5–4.0</td>
</tr>
<tr>
<td>Placenta previa</td>
<td>1.8–3.9</td>
</tr>
<tr>
<td>Placental abruption</td>
<td>0.5–16.5</td>
</tr>
<tr>
<td>Cesarean section</td>
<td>1.1–6.7</td>
</tr>
<tr>
<td>Postpartum hemorrhage</td>
<td>1.6–4.0</td>
</tr>
<tr>
<td>Retained placenta</td>
<td>2.0–2.7</td>
</tr>
</tbody>
</table>

All values are odds ratios unless stated otherwise.

Data from Refs.\textsuperscript{13,24,54–56}
Fibroids clearly increase the risk of pregnancy loss. Compared with women without fibroids, women with fibroids in all locations have a relative risk of spontaneous abortion of 1.678. Women with fibroids pursuing ART also have a significantly lower ongoing pregnancy/live birth rate, with a relative risk of 0.697 compared with controls, in part because of miscarriages. Additionally, the risk of pregnancy loss correlated with fibroid location. Specifically, submucosal and intramural fibroids had notably higher rates of spontaneous abortion and notably lower rates of live births. However, subserosal fibroids had no significant impact. Fibroids may further increase the miscarriage rate.

Fibroids have also been associated with malpresentation of the fetus. An odds ratio of 3.98 for breech presentation has been calculated for women with fibroids compared with women without fibroids. Fetal malpresentation may increase the probability of a cesarean section, which subsequently increases the risk of maternal morbidity.

Last, fibroids may increase the risk of preterm labor. This is particularly true if the fibroids are large, if there are multiple fibroids, or if placentation occurs next to or overlying a fibroid. Other reports concur that fibroids increase the risk of preterm labor but do not agree on the increase in the risk of preterm birth. A 2009 meta-analysis by Olive and Prittis showed no significant disparity in preterm delivery rates among patients with fibroids in all locations compared with controls.

MEDICAL THERAPIES

Current medical treatment of fibroids includes progestins, oral contraceptives, nonsteroidal anti-inflammatory drugs, tranexamic acid, and gonadotropin-releasing hormone agonists (GnRHa). Progesterone receptor agonists, selective progesterone receptor modulators, and aromatase inhibitors have also been investigated as alternatives to surgery. Some of these medical therapies are limited by undesirable side effects (Table 2). Progestins, nonsteroidal anti-inflammatory drugs, and oral contraceptives have been used off-label for temporary management of bleeding; however, they are unlikely to affect fibroid volume. GnRHa reduced fibroid volume by 35% to 65% in 3 months and induced amenorrhea but is typically used preoperatively to postpone surgery in a severely anemic patient or possibly to reduce uterine volume and to facilitate a vaginal approach to hysterectomy. More recently, Parsanezhad and colleagues reported that letrozole at 2.5 mg/d reduced fibroid size by 45.6% versus triptorelin, a GnRHa, which reduced fibroid size by only 33.2%. The antiprogesterins mifepristone and ulipristal acetate also effectively induce amenorrhea and reduce fibroid volume. Donnez and colleagues recently published 2 studies of ulipristal acetate as a treatment of fibroids. In one study, uterine bleeding was effectively controlled in 91% and 92% of women taking a 5 mg and 10 mg daily dose of ulipristal acetate, respectively, compared with 19% in women taking placebo. In the second study, Donnez and colleagues daily oral doses of ulipristal acetate (at both 5 mg and 10 mg) had comparable clinical outcomes and reduction in fibroid volume compared with once-monthly injections (3.75 mg) of the GnRHa leuprolide acetate. Further, this reduction was sustained for 6 months after ulipristal acetate was stopped. The selective progesterone receptor modulator asoprisnil also causes a significant reduction in bleeding and size, and the effect seems to persist for 3 months. It should be noted, however, that some of these agents have been associated with altered endometrial pathologic conditions. However, the long-term significance of the endometrial changes is not clear at present.

An effective long-term medical therapy for uterine fibroids would reduce heavy uterine bleeding and fibroid/uterine volume without excessive side effects. To date,
currently approved treatments reduce symptoms only temporarily, and although new agents are in development, the ideal medical therapy has remained elusive.

**MYOMECTOMY**

There are different approaches to myomectomy: laparoscopically, abdominally (laparotomy), robotically, or hysteroscopically. Although myomectomies have traditionally been performed by laparotomy, the first myomectomy by laparoscopy was performed by Dr Kurt Semm in 1979. This approach eventually became mainstream in the early 1990s. Today, minimally invasive myomectomy approaches have become the preferred approach by patients and providers alike.

**HYSTEROSCOPY**

Submucosal fibroids, in particular, lend themselves well to a hysteroscopic surgical approach. Clinicians must determine the location, number, and percentage of the fibroids that are located in the uterine cavity. The Wamsteker classification system, used by the European Society of Gynecological Endoscopy, can be helpful in determining the probability of successful removal of submucosal fibroids by hysteroscopic myomectomy. Clinicians may also use the newer STEPW (size, topography, extension, penetration, wall) classification system proposed by Lasmar and colleagues in 2005. Hysteroscopic resection of submucosal fibroids offers minimal complications and rapid recovery times. Because there have been no reported cases of uterine rupture with this technique, patients may attempt a vaginal delivery after hysteroscopic myomectomy.

**Pregnancy Rates and Obstetric Outcomes after Myomectomy**

Myomectomy is most often used for women who desire future fertility. Pregnancy rates have reached 50% to 60% after both laparoscopy and abdominal myomectomy, with good obstetric outcomes. Myomectomy, however, does not eliminate symptoms permanently and is associated with surgical risks and complications (eg, loss of blood, long procedure and hospital stay, postoperative morbidity). Postoperative adhesions are of particular concern, because it is certainly possible that they may negatively impact future fertility.

Success in myomectomy depends on the location of fibroids. Intramural and subserosal fibroids are often resected using a laparoscopic or abdominal myomectomy. After undergoing an abdominal myomectomy, the risk of uterine rupture in pregnancy is low (~0.002%). Even though the incidence of uterine rupture is lower than that after a previous cesarean (~0.1%), patients with transmural incisions after abdominal or laparoscopic myomectomy generally undergo cesarean delivery.

Myomectomy is of proven benefit. In a study by Casini and colleagues, patients who underwent myomectomy for resection of submucosal fibroids had higher clinical pregnancy rates compared with patients with fibroids who did not undergo surgery (43.3% for operated vs 27.2% for unoperated). The likelihood of live births and spontaneous abortions was similar in both groups. Summarily, data from randomized and controlled studies on the subject suggest that clinical pregnancy, live birth, and spontaneous abortion rates will normalize over time in women with submucosal fibroids after myomectomy compared with infertile women without fibroids.

Myomectomy is also beneficial for infertile patients with intramural fibroids. Casini and colleagues found higher pregnancy rates in patients with intramural fibroids who underwent myomectomy, as opposed to those who did not (56.5% vs 41%, Impact and Management of Fibroids for Fertility
<table>
<thead>
<tr>
<th>Medications</th>
<th>Decreased Size/Volume</th>
<th>Decreased Bleeding</th>
<th>Side Effects</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progestins</td>
<td>No</td>
<td>Yes</td>
<td>Induces uterine fibroid proliferation</td>
<td>Off-label</td>
</tr>
<tr>
<td>Oral contraceptives</td>
<td>No</td>
<td>Yes</td>
<td>Minimal</td>
<td>Off-label</td>
</tr>
<tr>
<td>Nonsteroidal anti-inflammatory drugs</td>
<td>No</td>
<td>Yes, 36% decrease found in one study$^{57}$</td>
<td>Negligible</td>
<td>Off-label</td>
</tr>
<tr>
<td>Tranexamic acid</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>Recently approved by Food and Drug Administration, Can be used for women with or without uterine fibroids</td>
</tr>
<tr>
<td>GnRHa</td>
<td>Yes, 35%-65% reduction in fibroid volume, mostly occurring in the first 3 mo following treatment$^{27}$</td>
<td>Yes, in 97% of patients by 6 mo. However, menses resumed in most patients 4-8 wk following discontinuation$^{57}$ Controlled uterine bleeding in 89% of patients for 3.75 mg monthly injection of leuprolide acetate$^{30}$</td>
<td>Estrogen deprivation</td>
<td>Only preoperatively</td>
</tr>
<tr>
<td>Mifepristone</td>
<td>Yes, 48.1% and 39.1% reduction in fibroid volume for 5 and 10 mg dose, respectively$^{58}$</td>
<td>Yes, induced amenorrhea in 60%-65% of patients$^{27}$</td>
<td>Linked with endometrial thickening</td>
<td>Long-term use is limited by potential for endometrial hyperplasia, 28% incidence$^{59}$</td>
</tr>
<tr>
<td><strong>Selective progesterone receptor modulators</strong>&lt;br&gt;(CDB 2914, aka ulipristal acetate)</td>
<td>Yes, 36% and 21% reduction in fibroid volume for 10 and 20 mg dose of CDB-2914, respectively&lt;sup&gt;59&lt;/sup&gt;&lt;br&gt;36% and 42% median reduction in fibroid volume for 5 and 10 mg dose of ulipristal acetate, taken daily for 3 mo. This reduction was maintained for 6 mo in most patients&lt;sup&gt;30&lt;/sup&gt;</td>
<td>Yes, amenorrhea in 81% and 90% of patients for 5 and 10 mg dose of CDB-2914, respectively&lt;sup&gt;59&lt;/sup&gt;&lt;br&gt;Amenorrhea in 73% and 82%, controlled bleeding in 91% and 92% of patients for 5 and 10 mg dose of ulipristal acetate, respectively, taken daily for 13 wk&lt;sup&gt;31&lt;/sup&gt;</td>
<td>Linked with altered endometrial development</td>
<td>In Europe, ulipristal acetate is used to treat bleeding pre-operatively</td>
</tr>
</tbody>
</table>

| **Selective progesterone receptor modulators**<br>(asoprisnil) | Yes, 36% reduction in fibroid volume for 25 mg dose of asoprisnil<sup>60</sup> | Yes, suppressed uterine bleeding in 28%, 64%, and 83% of patients for 5, 10, and 25 mg dose of asoprisnil, respectively<sup>60</sup><br>Suppressed bleeding in 91% of patients for 25 mg dose of Asoprisnil taken for 12 wk<sup>32</sup> | Linked with altered endometrial morphology |  |

| **Aromatase inhibitors**<br>(eg, letrozole) | Yes, 45.6% reduction in fibroid volume<sup>29</sup> | No | Linked with ovarian stimulation | Off-label |

*Data from Refs. 27,29–32,57–60*
respectively). As stated previously, subserosal fibroids are acknowledged as having little impact on fertility.\cite{7}

**Effect of Myomectomy on ART Outcome**

As discussed previously, evidence suggests that fibroid size before ART can cause lower implantation rates. In patients with intramural fibroids greater than 50 mm, myomectomy before IVF has been shown to positively impact pregnancy outcomes.\cite{37} A study by Bulletti and colleagues\cite{37} in 2004 compared 84 women who chose to undergo myomectomy before IVF with 84 women who started IVF but did not undergo surgery. The women who did undergo surgery had a 25% rate of delivery and a clinical pregnancy rate of 33%, compared with 12% and 15% in the nonsurgical group.\cite{37} This study suggested that myomectomy before ART is likely to improve pregnancy outcomes in infertile patients with submucosal fibroids and with intramural fibroids greater than 5 cm.\cite{37} For subserosal fibroids, myomectomy before ART does not affect pregnancy outcomes.

**Myomectomy During Pregnancy**

There is currently a lack of large, randomized, and controlled studies of the safety and efficacy of myomectomies during pregnancy and cesarean sections. Thus, myomectomy during pregnancy may be useful only in certain specific instances, such as early in pregnancy and when fibroids are large, growing rapidly, and causing recurrent pain. However, the risk of pregnancy complications including miscarriage or fetal loss is of paramount concern.

**Recurrence and Reintervention after Myomectomy**

Fibroid recurrence has been reported in 15% to 51% of cases up to 5 years after myomectomy.\cite{38} This large variability was probably the result of the ethnic diversity of the study groups and of different criteria and methods used to diagnose recurrence. In the past, the probability of a subsequent surgery was thought to be based on the patient’s age during the first myomectomy but may actually be more affected by parity as the cumulative probability of recurrence is decreased if a woman has children after myomectomy.

**GnRHa Pretreatment Before Myomectomy**

GnRHa treatment before a myomectomy has been proposed as a means to decrease fibroid volume and, thus, enhance removal while reducing complications. Vercellini and colleagues\cite{39} showed that GnRHa pretreatment had negligible effects on blood loss, postoperative morbidity, hospital stay, and operating time. Others\cite{27} have expressed concern that GnRHa pretreatment may increase the risk of recurrence.

**MRGFUS**

MRGFSU for leiomyoma treatment was approved in 2004 by the Food and Drug Administration. Initial results in symptom management are encouraging, and outcomes may be enhanced by GnRHa pretreatment.\cite{38} Rabinovici and colleagues\cite{40} reported 54 pregnancies in 51 women after MRGFSU, with a mean time to conception of 8 months after procedure with a 41% live birth rate. Of the women who conceived, 28% had a spontaneous abortion and 64% delivered vaginally. Of the women who delivered, there were 6.7% (1 of 15) preterm births, 2 cases of placenta previa (9%), and 93% term births.\cite{40} Although the preliminary results are reassuring,
women who become pregnant after MRgFUS should be carefully followed during pregnancy.

**UAE**

UAE (aka uterine fibroid embolization [UFE]) is a minimally invasive procedure that involves cutting off the blood supply of the fibroids. UFE was introduced by Ravina and colleagues in 1995. In the past decade, UAE has become popular as a successful alternative to surgery. Clinical outcomes with UAE are comparable to surgery. UAE offers low rates of serious complications and rapid procedure and recovery times. Early studies have shown that 80% to 95% of patients experienced improvement in their symptoms. Fibroids have also been reported to shrink by about 44% in volume in 3 months. As of August 2008, the American College of Obstetricians and Gynecologists has even recognized UFE as having “level A evidence” to support that it is safe and effective in appropriately selected women.

**Pregnancy Rates and Obstetric Outcomes after UAE**

UAE is not recommended for women with fibroids who desire future fertility, in part because of reported cases of transient and permanent amenorrhea. The reduction in menstrual flow raises the concern for endometrial damage that may contribute to abnormal placentation and/or reduced ovarian function or failure. However, the incidence of amenorrhea has been found to occur in less than 5% of patients and is clearly exacerbated by advanced age or perimenopausal status.

Goldberg and colleagues suggested that pregnancies after UAE are at risk for malpresentation, preterm birth, cesarean section, and postpartum hemorrhage compared with the general population without fibroids. Homer and Sarodigan found that rates of miscarriage, cesarean section, and postpartum hemorrhage were increased after UFE compared with control pregnancies with fibroids. Mara and colleagues used hysteroscopy to evaluate 127 patients at 3 to 9 months after UAE (mean age 35.1 years) and found that 59.8% of the women had an abnormal endometrium with tissue necrosis (40.9%), intracavitary myoma protrusion (35.4%), endometrium “spots” (22.1%), intrauterine synechiae (10.2%), and “fistula” between the uterine cavity and intramural fibroid (6.3%). Necrosis and/or hyalinization was found in 35.4% of patients, even though 78% were asymptomatic. This high rate of intrauterine pathologies after UAE may help explain the reported increased risk of in early pregnancy loss. Because UAE is still relatively new, long-term effects on fertility and pregnancy outcomes have not yet been established, and more research is needed with larger cohorts from multiple centers.

**Recurrence and Reintervention after UAE**

Two large randomized trials, the Randomised comparison of uterine artery embolisation (UAE) with surgical treatment in patients with symptomatic uterine fibroids (REST) and Uterine artery embolization vs hysterectomy in the treatment of symptomatic uterine fibroids (EMMY) trials, addressed the safety of UAE. The REST trial was composed of patients who had undergone myomectomy, hysterectomy, and UAE in the United Kingdom. Patients who had undergone surgery and UAE had similar improvements in symptoms after 5 years, but reintervention was more likely after UAE with a fibroid recurrence rate of 32%. The EMMY trial, conducted in the Netherlands, compared UAE and hysterectomy, concluding that symptoms improved at similar rates for both procedures. A reintervention rate of 28% after 5 years was noted for patients who had undergone an UAE.
UAE VERSUS MYOMECTOMY

Myomectomy seems to have a higher pregnancy and delivery rate than UAE or UFE. A randomized trial of 121 women conducted by Mara and colleagues compared UAE to myomectomy. Two years after their procedures, 78% of the myomectomy group and 50% of the UFE group became pregnant. The delivery rate was 48% and 19% and the abortion rate was 23% and 64%, for the myomectomy and UAE group, respectively. Further data with longer follow-up time are needed to expound on these findings. However, Mara and colleagues concluded that myomectomy seems to have better reproductive outcomes, at least in the first 2 years. Goldberg and Pereira concurred that pregnancy after UFE likely yields higher rates of preterm delivery and malpresentation (odds ratio of 6.2 and 4.3, respectively) compared with laparoscopic myomectomy.

The spontaneous abortion rate found in Mara and colleagues study was higher than that reported by the 2005 Ontario multicenter prospective trial (16.7%), the 2005 retrospective trial of Carpenter and Walker (27%), and the 2006 controlled retrospective multicenter trial of Goldberg and Pereira (24% after UAE and 15% after laparoscopic myomectomy). However, all of these studies point toward the possibility that pregnant women after UAE are more likely to miscarry compared with pregnant women after myomectomy.

It should be noted that 4 women in the Mara and colleagues cohort experienced reduced ovarian function. One patient had 6 weeks of amenorrhea but a normal ovarian function (follicle-stimulating hormone = 6.4 IU/L) 6 months after UAE. She subsequently became pregnant. Three women had a transient ovarian dysfunction or failure with a follicle-stimulating hormone elevation (from <10 IU/L before UAE to 15.0, 30.4, and 48.9 IU/L) accompanied by 2 months of amenorrhea in 1 patient with no response to progesterone.

UAE VERSUS MRGFUS

Rabinovici and colleagues suggested that the MRgFUS term delivery rate was higher and cesarean section rate was lower than that of UAE (93% vs 71%–82%, 36% vs 50%–73%, respectively). The authors also noted an increased incidence of low birth weight infants and stillbirths in women who had undergone an UAE. These obstetric complications have not been reported after MRgFUS. The time to conception, miscarriage rate, and placenta previa rate were comparable between MRgFUS and UAE.

SUMMARY

Available treatments for uterine fibroids include medical therapies, surgery, and newer options such as UAE and MRgFUS. The proper treatment of each individual patient will depend on the patient’s age and desire to retain her uterus and/or future fertility. Current evidence supports that myomectomy is still the better choice for women who desire to have a child. Treatment selection will also be dictated by the location, size, and number of fibroid(s). For select women, fibroids size, previous surgery or operative risk, UFE or UAE may be the best approach.

Clinicians must balance the potential for symptom relief with associated complications of the procedure. Decisions are best founded on evidence-based efficacy of available treatment options for uterine fibroids, keeping in mind the goal of optimizing pregnancy rates and obstetric outcomes in women who desire future fertility. Designing individualized management plans will ensure optimal outcomes and maximal patient satisfaction.
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