

A premenopausal patient with multiple uterine fibroids can be an appropriate candidate for myomectomy depending on her symptoms, the physical examination, and ultrasound findings.

ILLUSTRATION: CHRISTY KRAMES FOR OBG MANAGEMENT



# 7 Myomectomy myths debunked

↴ Hysterectomy is increasingly the first—and only—treatment option recommended for fibroids, but evidence shows that myomectomy is efficacious, safe, and associated with improved quality of life for many women. It is time to discard the myths about myomectomy.

**William H. Parker, MD**

**F**ibroids are extremely common and can be detected in 60% of African American women and 40% of white women by age 35. By age 50, more than 80% of African American women and almost 70% of white women have fibroids. Although most women with fibroids are relatively asymptomatic, women who have bothersome symptoms, such as heavy menstrual bleeding, urinary frequency, pelvic or abdominal pressure, or pain, account for nearly 30% of all gynecologic admissions in the United States. The cost of fibroid-related care, including surgery, hospital admissions, outpatient visits, and medications, is estimated at \$4 to \$9 billion per year.<sup>1</sup> In addition, each woman seeking treatment for fibroid-related symptoms incurs an expense of \$4,500 to \$30,000 for lost work or disability every year.<sup>1</sup>

Many treatment options, including medical therapy and noninvasive procedures, are now available for women with

symptomatic fibroids. For women who require surgical treatment, however, hysterectomy is often recommended. Fibroid-related hysterectomy currently accounts for 45% of all hysterectomies, or approximately 195,700 per year. Although the American College of Obstetricians and Gynecologists (ACOG) clinical management guidelines state that myomectomy is a safe and effective alternative to hysterectomy for treatment of women with symptomatic fibroids, only 30,000 myomectomies (abdominal, laparoscopic, and robotic-assisted approaches) are performed each year.<sup>2</sup> Why is this? One reason may be that, although many women wish to have uterus-preserving treatment, they often feel that doctors are too quick to recommend hysterectomy as the first—and sometimes only—treatment option for fibroids.<sup>3</sup>

**CASE** **Woman with fibroids seeks alternative to hysterectomy**

A 42-year-old woman (G2P2) presents for a third opinion regarding her heavy menstrual bleeding and known uterine fibroids. She does not want to have any more children, but she wishes to avoid a hysterectomy. Both her regular gynecologist and the second gynecologist she consulted recommended hysterectomy as the first, and only, treatment option. Physical examination reveals a 16-week-sized uterus,

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and ultrasonography shows at least 6 fibroids, 2 of which impinge on the uterine cavity. The patient's other gynecologists advised her that a myomectomy would be a "bloody operation," would leave her uterus looking like Swiss cheese, and is not appropriate for women who have completed childbearing.

The patient asks if myomectomy could be considered in her situation. How would you advise her regarding myomectomy as an alternative to hysterectomy?

### Organ conservation is important

In 1931, prominent British gynecologic surgeon Victor Bonney said, "Since cure without deformity or loss of function must ever be surgery's highest ideal, the general proposition that myomectomy is a greater surgical achievement is incontestable."<sup>4</sup> As current hysterectomy and myomectomy rates indicate, however, we are not attempting organ conservation very often.

Other specialties almost never remove an entire organ for benign growths. Using breast cancer surgery as an admirable paradigm, consider that in the early 20th century the standard treatment for breast cancer was a Halsted radical mastectomy with axillary lymphadenectomy. By the 1930s, this disfiguring operation was replaced by simple mastectomy and radiation, and by the 1970s, by lumpectomy and lymphadenectomy. Currently, lumpectomy and sentinel node sampling is the standard of care for early stage breast cancer. This is an excellent example of "minimally invasive surgery," a term fostered by gynecologists. And, these organ-preserving surgeries are performed for women with cancer, not a benign condition like fibroids.

Although our approach to hysterectomy has evolved with the increasing use of laparoscopic or robotic assistance, removal of the entire uterus nevertheless remains the surgical goal. I think this narrow view of surgical options is a disservice to our patients.

Many of us were taught that myomectomy was associated with more complications and more blood loss than hysterectomy.

We were taught that the uterus had no function other than childbearing and that removing the uterus had no adverse health effects. The dogma suggested that myomectomy preserved a uterus that looked like Swiss cheese and would not heal properly and that the risk of fibroid recurrence was high. These beliefs, however, are myths, which are discussed and debunked below. In second and third installments for this series on myomectomy, I present steps for successful abdominal and laparoscopic technique.

### MYTH #1: Hysterectomy is safer than myomectomy

Myomectomy is performed within the confines of the uterus and myometrium, with only infrequent occasion to operate near the ureters, uterine vessels, bowel, or bladder. Therefore, it should not be surprising that studies show that fewer complications occur with myomectomy than with hysterectomy.

A retrospective review of 197 women who had myomectomy and 197 women who underwent hysterectomy with similar uterine size (14 vs 15 weeks) reported that 13% (n = 26) of women in the hysterectomy group experienced complications, including 1 bladder injury, 1 ureteral injury, and 3 bowel injuries; 8 women had an ileus and 6 women had a pelvic abscess.<sup>5</sup> Only 5% (n = 11) of the myomectomy patients had complications, including 1 bladder injury; 2 women had reoperation for small bowel obstruction, and 6 women had an ileus. The risks of febrile morbidity, unintended surgical procedure, life-threatening events, and rehospitalization were similar for both groups.

Authors of a recent systematic review of 6 studies, which included 1,520 women with uterine size up to 18 weeks, found higher rates of visceral injury and longer hospital stays for women who had a hysterectomy compared with those who had a myomectomy (TABLE 1).<sup>6</sup>

### MYTH #2: Myomectomy is associated with more surgical blood loss than hysterectomy

In the previously cited study of 197 women



**Current hysterectomy and myomectomy rates indicate that we are not attempting organ conservation very often**

**TABLE 1 Surgical complications: Myomectomy versus hysterectomy (abdominal routes)<sup>6</sup>**

Surgical complication	Myomectomy	Hysterectomy
Visceral injury	1.3%	2.0%
Life-threatening complication	0.4%	0.4%
Return to operating room	0.7%	0.9%
Readmission	1.1%	0.5%
Estimated blood loss	582 mL	869 mL ( $P < .00001$ )
Transfusion	19%	22%
Fever	—	—
Hospital stay	-.25 day	+.25 day ( $P = .04$ )

treated with myomectomy and 197 women treated with hysterectomy, the estimated blood loss was greater in the hysterectomy group (484 mL) than in the myomectomy group (227 mL). When uterine size was corrected for, blood loss was no greater for myomectomy than for hysterectomy.<sup>5</sup> The risk of hemorrhage (>500 mL blood loss) was greater in the hysterectomy group (14.2% vs 9.6%). Authors of the recent meta-analysis also found that the rate of transfusion was higher in the hysterectomy cohort. Tourniquets, misoprostol, vasopressin, and tranexamic

acid all have been shown to significantly decrease surgical blood loss. (These treatments will be discussed in the next installment of this article series.)

**MYTH #3: A uterus will look like Swiss cheese after a myomectomy**

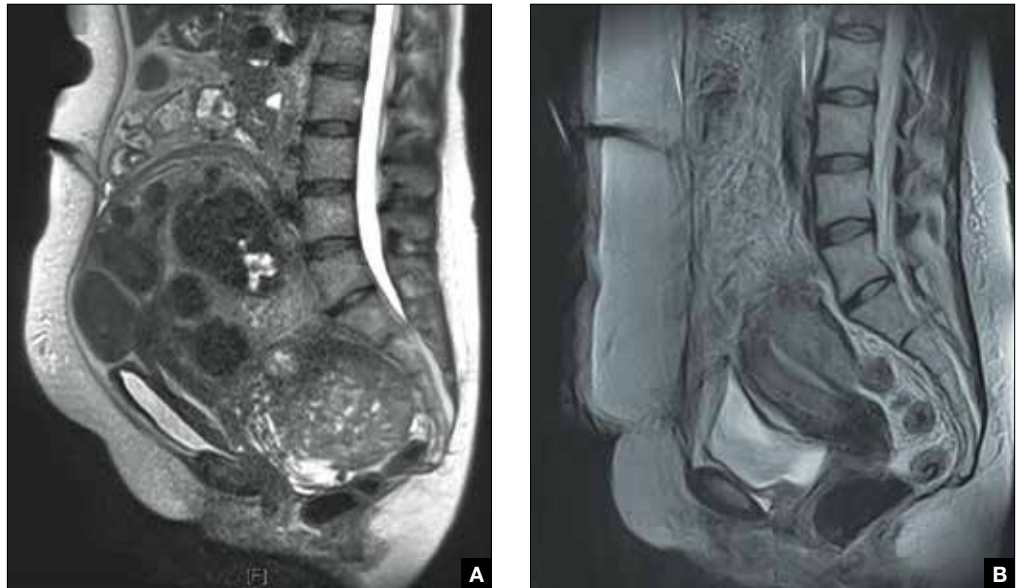
The uterus heals remarkably well after myomectomy. Three months following laparoscopic myomectomy, 3-dimensional Doppler ultrasonography demonstrated complete myometrial healing and normal blood flow to the uterus.<sup>7</sup> In a study of women undergoing

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## FIGURE 6-months' postoperative MRI compared with preoperative MRI



Preoperative magnetic resonance imaging (MRI) scan (A) shows 7 fibroids in a 22-week-sized uterus, and 6-month postoperative MRI scan (B) shows a normal-sized uterus with excellent healing of the myometrium.

### FAST TRACK

The risk of new fibroid growth depends on the number of fibroids originally removed and the amount of time until menopause

abdominal myomectomy, follow-up magnetic resonance imaging (MRI) with gadolinium showed complete healing of the myometrium and normal myometrial perfusion by 3 months.<sup>8</sup> This study also found that, after removal of 65 g to 380 g of fibroids, the uterine volume 3 months after surgery was 65 mL, essentially equivalent to the normal volume of a uterus without fibroids (57 mL).<sup>8</sup> See **FIGURE** for MRI scans of the uterus before and after myomectomy.

#### MYTH #4: Fibroids will just grow back after myomectomy

Once a fibroid is completely removed surgically, it does not grow back. The risk of new fibroid growth depends on the number of fibroids originally removed and the amount of time until menopause, when fibroids reduce in size and symptoms usually resolve. Given that the prevalence of fibroids is nearly 80% by age 50, studies measuring the detection of new fibroid growth of 1 cm on ultrasound overstate the problem.<sup>9</sup> What is likely a more important consideration for women

is whether, following myomectomy, they will need another procedure for new fibroid-related symptoms.

Results of a meta-analysis of 872 women in 7 studies with 10- to 25-year follow-up indicated that 89% of women did not require another surgery.<sup>10</sup> In another study, authors found that, over an average follow-up of 7.6 years, a second surgery occurred in 11% of the women who had 1 fibroid initially removed and for 26% of women who had multiple fibroids initially removed.<sup>11</sup> In another study of 92 women who had either abdominal or laparoscopic myomectomy after age 45 and who were followed for an average of 30 months, only 1 woman (1%) required a hysterectomy for fibroid-related symptoms.<sup>12</sup> That patient had growth of a fibroid that was present but was not removed at her initial laparoscopic myomectomy.

#### MYTH #5: Hysterectomy with ovarian conservation does not change hormone levels

Following hysterectomy with ovarian

**TABLE 2 Antimüllerian hormone values before and after simple hysterectomy or myomectomy<sup>15</sup>**

Antimüllerian hormone level (ng/mL)	Hysterectomy-treated women (n = 35)	Myomectomy-treated women (n = 35)
Before surgery	1.08	1.54
3 months after surgery	0.81 ( $P < .01$ )	1.50

conservation, some women begin menopause earlier than age-matched women who have not undergone any surgery.<sup>13</sup> Hysterectomy with ovarian conservation prior to age 50 has been associated with a significant increase in the risk of coronary heart disease, stroke, and heart failure.<sup>14</sup> In a prospective longitudinal study, antimüllerian hormone (AMH) levels were persistently decreased following hysterectomy despite ovarian conservation.<sup>15</sup> However, 3 months after myomectomy, no such changes in AMH levels were seen (TABLE 2).<sup>15</sup>

Early natural menopause has been associated with an increase in cardiovascular disease and death, and bilateral oophorectomy has been associated with increased risks of cardiovascular disease, all-cause mortality, lung cancer, colon cancer, anxiety, and depression. Although taking estrogen might obviate these adverse health effects, the majority of women who receive a prescription for estrogen following surgery are no longer taking it 5 years later.

**MYTH #6: Fibroid growth in a premenopausal patient means cancer may be present**

While most fibroids grow slowly, rapid growth of benign fibroids is very common. Using computerized analysis of a group of 72 women having serial MRI scans, investigators found that 34% of benign fibroids increased more than 20% in volume over 6 months.<sup>16</sup> In premenopausal women, “rapid uterine growth” almost never indicates presence of uterine sarcoma. One study reported only 1 sarcoma among 371 women operated on for rapid growth of presumed fibroids.<sup>17</sup> Using current criteria from the World Health Organization to determine the pathologic diagnosis, however, that 1 woman was

determined to have had an atypical leiomyoma. Therefore, the prevalence of leiomyosarcoma in that study approached zero. In addition, in the 198 women who had a 6-week increase in uterine size over 1 year (one published definition of rapid growth), no sarcomas were found.<sup>17</sup>

Because of recent concern about leiomyosarcoma and morcellation of fibroids, some gynecologists have reverted to advising women that growing fibroids might be cancer and that hysterectomy is recommended. However, there is no evidence that fibroid growth is a sign of leiomyosarcoma in premenopausal women. Leiomyosarcoma should strongly be considered in a postmenopausal woman on no hormone therapy who has growth of a presumed fibroid.

**MYTH #7: Myomectomy will not improve symptoms**

Fibroid-related symptoms can be significant; women who undergo hysterectomy because of fibroid-related symptoms have significantly worse scores on the 36-Item Short-Form Survey (SF-36) quality-of-life questionnaire than women diagnosed with hypertension, heart disease, chronic lung disease, or arthritis.<sup>18</sup>

For women with fibroid-related symptoms, myomectomy has been shown to improve quality of life. A study of 72 women showed that SF-36 scores improved significantly following myomectomy (TABLE 3, page 48).<sup>19</sup> In another study that used the European Quality of Life Five-Dimension Scale and Visual Analog Scale, 95 women had significant improvement in quality of life ( $P < .001$ ) following laparoscopic myomectomy.<sup>20</sup>

For some women, hysterectomy may have an impact on emotional quality of life. Some women report decreased sexual desire



**There is no evidence that fibroid growth is a sign of leiomyosarcoma in premenopausal women**



### >> WATCH FOR

part 2 of this series on myomectomy, including abdominal myomectomy technique and this case's conclusion, in an upcoming issue. In part 3, Dr. Parker will present surgical technique for laparoscopic myomectomy.

**TABLE 3** Improvement in quality-of-life scores following myomectomy<sup>19</sup>

Domain	Before treatment	1 year after treatment
Symptom severity	55.9	18.3
Concern	44.2	86.2
Activities	49	88
Mood	47.2	84
Control (health, life, future)	46.8	87.9
Sexual function	46.6	88.8
Health-related quality of life	46.4	86.3

Domains are measured on a scale of 0–100, with 100 representing “good health.”

after hysterectomy. They worry that partners will see them as “not whole” and less desirable. Some women expect that hysterectomy will lead to depression, crying, lack of sexual desire, and vaginal dryness.<sup>21</sup> No such changes have been reported for women having myomectomy.

### CASE Continued: Third consult leads patient to schedule surgical procedure

After reviewing the patient's symptoms, examination, and ultrasound results, we advise the patient that abdominal myomectomy is indeed appropriate and feasible in her case. She schedules surgery for the following month. ☺

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