Uterine-Sparing Treatment Options for Symptomatic Uterine Fibroids

Developed in collaboration

Med-IQ Inspiring Medical Education www.Med-IQ.com

DukeHealth

Learning Objective

Upon completion, participants should be able to:

- Review uterine-sparing fibroid therapies

Background

- Uterine fibroids are benign smooth muscle tumors of the uterus
- Affects 70%-80% of all women by age 50
- Although rare (approximately 2 per 1,000 women), a small percentage of uterine fibroids are malignant (leiomyosarcoma)
- Symptoms include bleeding, pain, pressure, and infertility
- Significant effect on health and quality of life
- Leading indication for hysterectomy
- Demand for uterine-sparing treatments continues to grow

US Department of Health & Human Services. https://report.nih.gov/nihfactsheets/viewfactsheet.aspx?csid=50;
US Food and Drug Administration. www.fda.gov/downloads/medicaldevices/safety/alertsandnotices/ucm393589.pdf.

Uterine-Sparing Treatment Options

- Medical therapies
  - GnRH agonists
  - Levonorgestrel IUD*
  - Aromatase inhibitors*
  - OCPs, progesterone receptor modulators, tranexamic acid*
- UAE
- MRgFUS
- RFVTA
- Myomectomy
  - Hysteroscopic
  - Laparotomy
  - Laparoscopic/robotic-assisted

*Off-label use.
Bartels CB, et al. *Clin Obstet Gynecol*. 2016;59:30-52; Ciolina F, et al. *Minerva Ginecol*. 2016;68:364-79.

Choosing Treatment Options

- Symptoms: bleeding vs bulk-related
- Location of fibroids
- Desire to preserve fertility

Medical Therapies

Agent	Adverse Effects
GnRH agonists	Hot flashes, headaches, and osteoporosis
Levonorgestrel IUD*	Vulvovaginitis, abdominal/pelvic pain, acne/seborrhea, ovarian cysts, breast pain, and headache
Aromatase inhibitors*	Hot flashes, muscle pain, osteoporosis, vaginal dryness, and decreased libido
OCPs*	Intermenstrual spotting, nausea, breast tenderness, headache, weight gain, mood changes, and decreased libido
Progesterone receptor modulators*	Nausea, weakness, fever/chills, vomiting, headache, diarrhea, and dizziness
Tranexamic acid*	Headache; sinus/nasal symptoms; back, abdominal, musculoskeletal, and joint pain; muscle cramps; migraine; anemia; and fatigue

*Off-label use.
Bartels CB, et al. *Clin Obstet Gynecol*. 2016;59:30-52; prescribing information.

Use of Medical Therapies

- Short-term relief of fibroid symptoms
  - Particularly when bleeding is the dominant or only symptom
  - Suitable for perimenopausal women or patients ineligible for surgery
- Preoperative management to reduce fibroid size, control bleeding, and improve hemoglobin levels
- Long-term treatment is not recommended
  - Failure rates are high—60% undergo surgery after 2 years
  - Randomized clinical trial data demonstrating long-term effectiveness are lacking
  - Significant adverse effects

Khan AT, et al. *Int J Womens Health*. 2014;6:95-114; Marjoribanks J, et al. *Cochrane Database Syst Rev*. 2006;CD003855; prescribing information.

Surgical Therapies: Myomectomy

- Gold standard for patients desiring fertility
- > 70% of patients report improvement in menorrhagia and pelvic pain
- Complications
  - Fever, infection, blood transfusion, and adhesions
- Recurrence
  - 50% at 5 years
  - 11%-26% require additional surgery
- Patients may require Cesarean delivery for future pregnancies

Myers ER, et al. *Obstet Gynecol.* 2002;100:8-17; Fedele L, et al. *Hum Reprod.* 1995;10:1795-6; Malone LJ. *Obstet Gynecol.* 1969;34:200-3; Weibel HS, et al. *J Obstet Gynaecol Can*. 2014;36:128-32.

Surgical Approaches

- Hysteroscopy
- Laparotomy
- Laparoscopy
- Robotic-assisted

Laparotomy vs Laparoscopy vs Robotic-Assisted

- Approach depends on myoma characteristics and **surgeon experience**
- All approaches are effective in treating menorrhagia and bulk-related symptoms

Chittawar PB, et al. *Curr Opin Obstet Gynecol*. 2015;27:391-7; ACOG Committee Opinion No. 444. *Obstet Gynecol*. 2009;114:1156-8.

Recurrence Risk

- Laparotomy: 27%-59% at 5 years
- Laparoscopy: up to 85% at 8 years
- Rosseti 2001:
  - RCT; 81 women with infertility and ≤ 7 fibroids
  - **No significant difference between laparoscopic and abdominal myomectomy in recurrence of fibroids at 3.3 years**
  - 27% with laparoscopic vs 23% with laparotomy

Seracchioli R, et al. *Hum Reprod*. 2000;15:2663-8; Alessandri F, et al. *J Minim Invasive Gynecol*. 2006;13:92-7; Rossetti A, et al. *Hum Reprod*. 2001;16:770-4.

Laparotomy vs Laparoscopy vs Robotic-Assisted

- Laparotomy:
  - **Benefits:** exposure, tactile sensation, uterine closure, shorter operative time
  - **Drawbacks:** longer recovery, more pain
- Laparoscopy:
  - **Benefits:** Less postoperative pain, shorter hospital stay, faster recovery
  - **Drawbacks:** limited to 1 or 2 fibroids ≤ 8 cm
- Robotic-assisted:
  - **Benefits:** offers minimally invasive treatment for large fibroids, multiple fibroids, and those in a difficult location
  - **Drawbacks:** long OR time, cost of procedure

Bhave Chittawar P, et al. *Cochrane Database Syst Rev*. 2014;CD004638; Advincula AP, et al. *Gynecology*. 2007;14:698-705.

In Between Therapies

UAE

- Occlusion of the uterine arteries via release of synthetic emboli → ischemic necrosis

Gupta JK, et al. *Cochrane Database Syst Rev.* 2006;CD005073.

Candidate for UAE

- Heavy menstrual cycles or dysmenorrhea secondary to fibroids
- Premenopausal
- No desire for fertility

Contraindications

- Asymptomatic fibroids
- Pregnancy
- PID
- Uterine malignancy

Gupta JK, et al. *Cochrane Database Syst Rev*. 2014;CD005073; Gonsalves C. *Semin Intervent Radiol.* 2008;25:369-77; American College of Obstetricians and Gynecologists. *Obstet Gynecol*. 2008;112:387-400.

Does UAE Improve Fibroid Symptoms?

- High improvement in symptoms, satisfaction, and quality of life for up to 10 years
- Efficacy is questionable when the only symptoms are bulk related

de Bruijn AM, et al. *Am J Obstet Gynecol*. 2016;215:745.e1-12; Spies JB. *Obstet Gynecol.* 2005;106:933-9.

Complications

- Minor complications:
  - Pain
  - Chronic vaginal discharge
  - Fibroid extrusion
  - Note:
    - **33% experience prolonged or severe symptoms**
    - **15% undergo readmission (severe pain, leukocytosis)**
- Postembolization syndrome:
  - Low-grade fever, pelvic pain, nausea, vomiting, fatigue, and anorexia
- Infection → necrotic uterus/hysterectomy

Hehenkamp WJ. *Cardiovasc Intervent Radiol.* 2006;29:179-87; van der Kooij SM, et al. *Am J Obstet Gynecol.* 2011;205:317.e1-18; Gupta JK, et al. *Cochrane Database Syst Rev.* 2014;CD005073.

MRgFUS

- Thermoablative technique
- Focuses several high-intensity ultrasound beams at the center of the fibroid

Rabinovici J, et al. *Fertil Steril.* 2010;93:199-209; Taran FA, et al. *Ultrasound Obstet Gynecol.* 2009;34:572-8.

Candidate for MRgFUS

- Heavy menstrual cycles, dysmenorrhea, and bulk-related symptoms secondary to fibroids
- Premenopausal
- Desiring fertility is no longer a contraindication

Contraindications

- **Bowel or adhesions in treatment path**
- **Adenomyosis**
- Uterus > 24 weeks' size during pregnancy
- Metal implants
- **Weight greater than 250 lbs**
- **Pedunculated fibroids**
- **Any scar in treatment path**

Rabinovici J, et al. *Fertil Steril*. 2010;93:199-209; Taran FA, et al. *Ultrasound Obstet Gynecol*. 2009;34:572-8.

Does MRgFUS Improve Fibroid Symptoms?

- Stewart 2006
  - 109 patients
  - Prospective cohort treated with MRgFUS
  - 71% reached clinically significant reduction of SSS at 6 months, 51% at 12 months
- Stewart 2007:
  - 359 patients followed for 2 years after MRgFUS
  - Significant improvement in SSS at 3 months
  - Significant improvement in Hct for anemic patients
  - **23% required additional treatment**
  - Long-term efficacy related to total leiomyoma volume coagulated at the time of treatment

Stewart EA, et al. *Fertil Steril*. 2006;85:22-9; Stewart EA, et al. *Obstet Gynecol*. 2007;110:279-87.

RFVTA

- RF energy applied through a needle array
- Laparoscopic procedure
  - Two sites:
    1) Ultrasound guidance
    2) Energy
- General anesthesia required

Berman JM, et al. *J Minim Invasive Gynecol*. 2014;21:767-74.

RFVTA: Efficacy

- Prospective analysis of 104 patients over 3 years
- Significant change in Uterine Fibroid Symptoms and Quality of Life Questionnaire
  - Symptoms: -32.6 (95% CI, -37.5 to -27.8; $P < .001$)
  - QOL: 39.2 (19.2) to 38.6 (95% CI, 33.3 to 43.9; $P < .001$)
- Repeat intervention rate was 11%

Berman JM, et al. *J Minim Invasive Gynecol*. 2014;21:767-74.

Summary

- Medical therapies are useful for the short-term relief of symptoms
- Uterine-sparing surgical techniques are effective in treating menorrhagia and bulk-related symptoms
- UAE, MRgFUS, and RFVTA are effective minimally invasive procedures that may reduce recovery time

To receive credit, click the “Get Credit” tab below for access to the evaluation, attestation, and post-test.

Contact Information

For CME questions or comments about this activity, please contact Med-IQ.

Call (toll-free) 866 858 7434 or e-mail info@med-iq.com.

Please visit us online at www.Med-IQ.com for additional activities provided by Med-IQ.

Unless otherwise indicated, photographed subjects who appear within the content of this activity or on artwork associated with this activity are models; they are not actual patients or doctors.

Abbreviations/Acronyms
Uterine-Sparing Treatment Options for Symptomatic Uterine Fibroids

CI = confidence interval
GnRH = gonadotropin-releasing hormone
Hct = hematocrit
IUD = intrauterine device
MRgFUS = magnetic resonance–guided focused ultrasound
OCP = oral contraceptive pill
OR = operating room
PID = pelvic inflammatory disease
QOL = quality of life
RCT = randomized controlled trial
RFVTA = radiofrequency volumetric thermal ablation
SSS = symptom severity score
UAE = uterine artery embolization