

MR guided Focused Ultrasound for Uterine Fibroids

Slide 1: New Options for the Management of Fibroids in the Ob/Gyn Practice

Hello, I am Dr. Charles Miller and I am a Clinical Associate Professor in the department of Ob/Gyn at the University of Illinois at Chicago, as well as a Clinical Associate in the department of Ob/Gyn at the University of Chicago.

Slide 2: Symptoms Related to Uterine Fibroids

A discussion of uterine fibroids is certainly pertinent. Let's face it: between 20% and 40% of all women over the age of 30 have fibroids. Moreover, 40% of the nearly 600,000 hysterectomies in the United States are secondary to uterine fibroids. Furthermore, symptoms of fibroids can really impact a patient. When you look at symptoms related to uterine fibroids, one has to think about those related to bleeding. The most common symptom is menorrhagia, heavy menstrual bleeding. Especially when a fibroid enters the uterine cavity, one can also have bleeding between periods, as well – metrorrhagia. When bleeding is so intense that the blood backs up in the uterus, one can also have dysmenorrhea as the uterus itself expands.

Slide 3: Symptoms Related to Uterine Fibroids

There are also symptoms that are related to bulk. These are pelvic pain or back pain. As fibroids go forward and press on the bladder, one oftentimes has urinary frequency. Posteriorly, one can have problems with constipation. When there is a lot of growth and the fibroid is quite large, one can have problems with urinary retention and hydronephrosis.

Slide 4: Symptoms Related to Uterine Fibroids

I am a reproductive endocrinologist and one of the problems I consult patients with is infertility, especially when that fibroid is noted to enter the uterine cavity or is near the cavity itself.

Slide 5: Medical Options in the Treatment of Uterine Fibroids

There is a number of current treatments for the uterine fibroid. I would like to divide those for you today into medical treatment, radiologic treatment, as well as surgical treatment.

The prime medical treatment is the use of GnRH agonists over three to six months. One can expect that the fibroid volume will shrink approximately 30% to 40%. Interestingly, however, FDA clearance for this drug is only for the treatment of anemia; therefore, when we are trying to deal with fibroid volume and to maintain that decreased volume, we are off-label. Moreover, if we are looking to decrease the size of the fibroid through a GnRH agonist and maintain that treatment, we must continue the treatment until menopause which certainly would be impractical in a younger woman. Finally, there is the need to use add-back therapy; that is, estrogen and progesterone to prevent bone loss. So, at the end of the day, a GnRH agonist is really good only for the patient who is peri-menopausal whom you are trying to get into her menopausal state or as a treatment prior to surgery.

Slide 6: Radiology and Uterine Fibroids

We all know that uterine artery embolization (UAE) or uterine fibroid embolization (UFE) have

become much more popular since its invention around 1995 with Ravina in France. Again, one knows of approximately a 30% to 40% reduction in fibroid volume. With this, one can see a 90% success in the treatment of heavy uterine bleeding, menorrhagia, as well as approximately an 85% success in the treatment of bulk symptoms. There are some drawbacks, however. Complications and failure do increase as the fibroid grows above 8 cm.

Slide 7: UAE and UFE

The failure also increases with multiple fibroids. Pain can be very severe for 48 to 72 hours after the embolization, often requiring hospitalization and the use of a PCA. Post-embolization syndrome has been known for up to one month post-procedure. Malaise, lethargy, elevated white blood count and temperature are all part of post-embolization syndrome.

Slide 8: Treatment Risks: UAE and UFE

Moreover, especially in women in their mid-40s, there can be a 15% risk of menopause post the procedure. We are all aware also of inadvertent embolization to other organs during the process. This can be a very serious consequence. Furthermore, there is the risk of severe adhesions post-embolization. In addition, recurrence has been stated in over 30% of patients and embolization cannot be used in patients interested in pregnancy.

Slide 9: Surgical Options

When one discusses surgical therapy, again, there are different options. One can remove the fibroids via laparotomy or laparoscopy and hysteroscopy. Certainly, myomectomy is the best option for pregnancy. It is also the best option for preservation of ovarian function, but there is known risk of intraoperative blood loss. Furthermore, especially with laparoscopic suturing, there is a long learning curve. Hospitalization can be 48 to 72 hours with laparotomy, while most patients undergoing laparoscopy or hysteroscopy will be discharged as an outpatient.

Slide 10: Surgical Options Continued

On the other hand, convalescence can be 4 to 6 weeks with laparotomy, while only 7 to 10 days with laparoscopy and 1 to 3 days with hysteroscopy. Again, recurrence can be problematic with stated rates of approximately 25%.

Slide 11: Hysterectomy

When one talks about surgery for the treatment of fibroids, one also must discuss hysterectomy, abdominal, vaginal or laparoscopic. As mentioned, hysterectomy still remains the most popular option with patients for the treatment of fibroids. Obviously, there is no risk of recurrence. One has to consider, however, that there can be an impact of ovarian function, with lowering of the age to menopause. Furthermore, there are risks of hemorrhage, ureter or bladder damage, as well as bowel damage.

Slide 12: Surgery: Hospitalization and Convalescence

Hospitalization is generally 48 to 72 hours with abdominal hysterectomy, 24 to 48 hours with a vaginal approach and 23 hours with a laparoscopic approach. Convalescence, again, is prolonged with 4 to 6 weeks with an abdominal approach and 2 to 3 weeks with a vaginal or laparoscopic approach.

Slide 13: Other Surgical Procedures

Finally, there are other surgical options that are basically new on the horizon. This includes laparoscopic uterine artery occlusion, the problem being at times access because of large fibroids; laparoscopic cryomyolysis, again problematic when fibroids are truly large or there are multiple fibroids; and endometrial ablation, which certainly is not capable of helping the patient with truly large fibroids or where the fibroids are away from the endometrial cavity.

Slide 14: New Advances

Given all of these different medical, radiologic and surgical techniques in the treatment of uterine fibroids, why then are we here discussing ExAblate® 2000? Well, quite simply, Exablate 2000 is the first and only focused ultrasound surgery system available. It was developed by Insightec, an Israeli company. It uses GE Healthcare's magnetic resonance imaging system which provides guidance and control of this non-invasive treatment for uterine fibroids.

After viewing the following presentations, it should be clear that this technology represents a significant advance in treatment and is a method that Ob/Gyn clinicians should consider including in their treatment armamentarium. Now, let us begin.