Intrauterine adhesions continue to plague gynecologists and reproductive endocrinologists. Approximately 70 years ago, Asherman and Toaff came out with their landmark paper on patients who present with intrauterine synechiae and amenorrhea. Asherman’s syndrome. The scarring can affect not only menstrual flow, but implantation as well, even in the environment of apparently normal uterine cavity. Moreover, strategies must be considered to reduce subsequent postoperative adhesions. This is especially problematic because the intrauterine cavity is a pseudo-space. The synchiae places traumatized tissue against traumatized tissue. This situation would appear to enable subsequent postoperative adhesion formation.

For this Master Class in gynecologic surgery, I have elicited the help of Dr. Charles March. Dr. March spent 30 years in the department of obstetrics and gynecology at the University of Southern California. Los Angeles, where he became professor in 1987. During his tenure there, Dr. March was a prolific writer, especially in the area of operative hysteroscopy, and was the recipient of numerous awards including many resident teaching awards. In 2000, Dr. March was given a Pioneer in Hysteroscopy award from the American Association of Gynecologic Laparoscopists.

Since 2003, Dr. March has been in private practice, where he specializes in infertility treatment and sees patients from across the country for operative hysteroscopy secondary to intrauterine synechiae. Even so, Dr. March continues to win teaching awards, now as a voluntary faculty member.

Dr. Miller, a reproductive endocrinologist in private practice in Arlington Heights, Ill., and Naperville, Ill., is the medical editor of this column.

Master Class
Intrauterine Adhesions

Many clinicians view intrauterine adhesions (Asherman’s syndrome) as a problem that occurs rarely, and only after a D&C. In fact, Asherman’s syndrome is far from being a rare condition, and the types of antecedent factors and their significance are quite different from what they were only a decade or so ago.

Asherman’s syndrome can occur after any type of gynecologic surgery, and we must shift our thinking and broaden our index of suspicion to accommodate the growing body of data that supports this claim. A literature review published in Fertility and Sterility 13 years ago reported that approximately 90% of all cases of Asherman’s syndrome occurred after curettage, mainly after D&C for a spontaneous abortion or one performed to control a postpartum hemorrhage. Although these two antecedent factors remain the most common causes, there has been a significant increase in the number of patients who develop endometrial scarring after gynecologic surgery, particularly following abdominal and hysteroscopic myomectomy.

Women who have had myomectomy or other types of uterine surgery make up an increasing proportion of all patients with adhesion formation and a variant of Asherman’s syndrome known as endometrial sclerosis. Endometrial sclerosis, commonly called an “unstuck Asherman’s,” is an end-stage disease in which the basalis layer of the endometrium has been severely damaged or even removed. In these women, the hysterosalpingography (HSG) may demonstrate a normal cavity or one of slightly reduced size, but with little or no scarring. This change presents new challenges because the damage that follows gynecologic surgery other than curettage is a much less curable condition.

Our Index of Suspicion
Key to our role as gynecologists is suspecting the problem. Any change in menstrual flow and pattern—from amenorrhea to any decrease in the duration or amount of bleeding—that follows any type of uterine surgery, irrespective of how minimal that surgery might have been, must prompt us to suspect that this patient may have scarring in her uterus. All patients with a history of intrauterine trauma must be considered at risk.

In addition to endometrial trauma (postpartum, postabortion, or recent pregnancy) and hyperestrogenism are important keys. Pregnant or recently pregnant uterus appears to be more vulnerable to scar formation.

Concomitantly, breast feeding increases the risk of adhesion formation because women who breast-feed remain estrogen deficient. Estrogen has a tremendous effect in promoting the healing of the uterus and regeneration of the endometrium. Women who breast-feed don’t have that stimulus. To a lesser extent, infection also can play a role. Decades ago, infection was viewed as critical, in that it was the “infected abortion” that was thought to cause Asherman’s syndrome. Today, infections are an uncommon cause of the problem. I have treated more than 1,000 patients with Asherman’s, and fewer than 5 had any clinical evidence of infection around the time of their original surgery. Still, the possibility of Asherman’s resulting from infections still exists.

Pelvic tuberculosis by itself, without any surgical trauma, causes scarring in the uterus. Considering the diversity of our society and the rise in antibiotic-resistant TB, we ought to keep it in mind. It is also important to appreciate the fact that the presence of normal menstrual flow does not rule out the presence of intrauterine adhesions. Approximately three-quarters of women with Asherman’s syndrome have amenorrhea or hypomenorrhea, but the remainder have menses of normal flow and duration. Other symptoms of intrauterine adhesions include infertility, recurrent miscarriage, and placenta accreta or its more severe variants.

Methods of Diagnosis
The diagnosis will most frequently be made by either HSG or a saline-infusion sonogram. However, these methods do not provide us with an anatomic or consecutive diagnosis. Both will demonstrate irregular, laceroidal defects spaced throughout the cavity. Access to the oviducts may or may not be blocked. A definitive diagnosis comes only with hysteroscopy.

We should individualize our diagnostic methods depending on the patient’s history and symptoms and our own index of suspicion. For instance, a patient who presents with amenorrhea and monthly cramping following a D&C would benefit from a pelvic ultrasound. This study is likely to demonstrate fluid in the uterus. Her hematocrit is secondary to outflow tract obstruction. There is no reason in this case to do a saline-infusion sonogram or an HSG. The next appropriate step is hysteroscopy, which will allow the diagnosis to be made with certainty so that treatment can commence.

Consider another patient with postcurettage amenorrhea. She has little or no fluid in the uterus and her endometrium is normal. Los Angeles weather is negative and a uterine sound cannot be passed into the cavity. In this case, it is wise to proceed to hysteroscopy because it would not be possible to pass the contrast material for HSG—or the saline for a saline-infusion sonogram—beyond the site that blocked passage of the sound. Hysteroscopy provides us with absolute proof of intrauterine adhesions. It allows us to directly inspect the uterine cavity and assess the extent, nature, and location of the adhesions. This also allows us to assess the disease, which is critical because classification enables us to make meaningful comparisons among different types of treatment regimens or adjunctive therapies. Finally, adhesiolysis under hysteroscopic guidance is more efficacious and less traumatic to the adjacent normal tissue.

Scissors vs. Heat
Since the introduction of hysteroscopy to treat intrauterine adhesions, the prognosis has gone from dismal to excellent. Hysteroscopic management not only enables us to cut all the scar tissue, but it ensures that we will not damage adjacent normal endometrium. There is no justification today for treating Asherman’s syndrome by a technique other than hysteroscopy.

Although comparative studies are not available, we advocate that only scissors be used to cut adhesions, and we use them in our own practice. Adhesions methods that use a resectoscope, an Nd:YAG laser, or a monopolar or bipolar electrode have their proponents. However, all of these modalities deliver energy to the endometrial surface and can cause further damage to the endometrium. Remember that these same instruments are used to cause endometrial ablation.

Years ago, it was demonstrated that—in contrast to what occurs after a scalpel has been used to make an incision—tissue damage is observed far from the operative site when electrosurgery or an Nd:YAG laser is used for the same purpose. These energy sources offer no advantage—neither speed nor improved hemostasis (intrauterine scars do not bleed, but myometrium does)—over scissor dissection.

In a patient with a damaged endometrium, it is prudent to limit the risk of further injury.

Although I have performed surgery that was not successful, it was not because of the inability of the flexible or semirigid scissors to cut through dense scars.

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Hysteroscopic Lysis of Intrauterine Adhesions

The Cook balloon uterine stent’s triangular shape conforms to the normal uterus.
Ovarian Endometriomas May Predict More, Deeper Lesions

Las Vegas — The presence of ovarian endometriomas indicates severe disease in endometriosis patients with lesions of the ureter, intestine, or vagina, based on data from 500 women presented at the annual meeting of the American Association of Gynecologic Laparoscopists.

Although previous research suggests that endometriomas in general is exacerbated by estrogen, the relationship between ovarian endometriomas and the number and location of endometrial lesions has not been widely studied.

To examine this association between ovarian endometriomas and disease severity, Dr. Charles Chapron of Université René Descartes, Paris, and his colleagues conducted a retrospective study of women who had surgery for deep infiltrating endometriosis between 1992 and 2000 and a prospective study of patients who had surgery for deep infiltrating endometriosis between 2001 and 2005.

Overall, 924 lesions were histologically confirmed, and they included 463 (50%) uterine lesions, 219 (24%) uterine fibroids, and 342 (37%) peritoneal lesions. These included 167 (18%) vaginal lesions, 56 bladder lesions (6%), and 19 (2%) uterine lesions. Patients who had ovarian endometriomas were nearly four times as likely to have more lesions and deeper lesions in the intestine and ureter and nearly twice as likely to have more lesions and deeper lesions in the vagina, compared with patients without endometriomas, Dr. Chapron reported.

But the presence of uterine lesions, which accounted for half of the total number and severity of postmenopausal endometriosis associated with the presence of an ovarian endometrioma, he noted.

—Heidi Splete

Gynecologic Surgeons Urged to Seek Cystoscopy Privileges for Final Check

San Francisco — Gynecologic surgeons should seek cystoscopy privileges so that they can conclude operations with a routine check for iatrogenic injuries to the ureters or bladder, speakers at a conference sponsored by the Society of Gynecologic Surgeons.

Dr. Michael P. Aronson said studies comparing gynecologic operations completed with cystoscopy to similar operations completed without cystoscopy have shown that universal cystoscopy can reduce bladder injuries by 90% and ureteral injuries by 90%. “To perform surgery safely, we must always be creating these injuries and not been aware of them,” said Dr. Aronson, director of Women’s Health Services at the University of Massachusetts Medical Center in Worcester, Mass.

Ureter injuries are usually easy to repair while the patient is still in the operating room, he added, but they can cause loss of renal function if not detected.

At one time or another most experienced surgeons have accidentally injured a ureter during a gynecologic procedure, agreed Dr. John O. L. De Laney, director of pelvic floor research at the University of Michigan in Ann Arbor. “If you looked and checked, at least you have done everything you can do,” he said.

Sometimes urologists will object to the granting of cystoscopy privileges to gynecologic surgeons, warned Dr. Kris Strathbern, director of the division of urogynecology/reconstruction at Dartmouth Medical School, Hanover, N.H. “Emphasize to them that this is for everybody’s benefit,” he said; they will not want to call repeatedly to the operating room.

—Jane Salodof MacNeil