Surgical Alternatives to Hysterectomy for Abnormal Uterine Bleeding

October 04, 2011
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Executive Summary

The purpose of this report is to present physicians with several surgical alternatives to hysterectomy for women experiencing menorrhagia and dysfunctional uterine bleeding. Approximately 8700 hysterectomies are performed annually in Minnesota. Due to its invasive nature, significant morbidity and mortality, long recovery period, and associated health care costs several surgical alternatives to hysterectomy were developed in the 1980s. These surgical techniques are called endometrial ablation. Endometrial ablation is a type of surgical procedure in which the endometrium, the uterine lining, is removed or destroyed by electrosurgery or the application of heat via laser energy or thermal fluids.

The patient selection criteria for endometrial ablation includes: blood loss >80 ml per cycle; bleeding for longer than 8 days; blood loss sufficient to cause anemia; or blood loss or symptoms that interfere with normal activities; drug treatment failed, was contraindicated, was refused; uterine size <12 weeks gestation, and uterine cavity <12 cm in length; all other causes of excessive menstrual bleeding have been excluded including cancer, precancer, and uterine lesions; and childbearing is complete.

Several endometrial ablation techniques have been developed. Transcervical resection of the endometrium (TCRE), involves the destruction of the endometrium with a resectoscope, a telescopic instrument with a wire loop or a rollerball at its tip. An electrical current delivered to the tip of the instrument cuts or coagulates the endometrium. During endometrial laser ablation (ELA), thermal energy produced by a neodymium-yttrium-aluminum-garnet (Nd:YAG) laser destroys the endometrium. TCRE and ELA are guided by hysteroscopy. A newer alternative for endometrial ablation is thermal balloon ablation of the endometrium (TBEA), a procedure that does not require the use of a hysteroscope. A latex balloon is inserted through the vagina into the cervix and is filled with heated fluid that coagulates the endometrium. An advantage of endometrial ablation is that it does not involve the removal of the uterus and thus, the operative and recovery times are shorter, and the complication rates are lower than for hysterectomy. In this evaluation the majority of studies reviewed compared one or more endometrial ablation techniques with hysterectomy, the surgical removal of the uterus.

In the two randomized controlled trials that compared outcomes for menorrhagia patients following endometrial ablation (laser ablation or endometrial resection) or hysterectomy at 1 year and at 4 years, the patient selection criteria included dysfunctional uterine bleeding, candidate for hysterectomy, age <50 years old, uterine size <10 weeks gestation, and no endometrial or precancer. In the first study the length of hospitalization and duration of postoperative pain, and the time to return to normal activities were significantly lower in the endometrial ablation group compared with the hysterectomy group. A higher percentage of patients in the hysterectomy group experienced major complications compared with the ablation group (5.2% versus 1%). The incidence of post-operative infection was significantly lower in the ablation group. At 1 year, 22% of the endometrial ablation patients were amenorrheic, 62% were hypomenorrheic, 3% were unchanged, 11.5% required repeat ablation, and 14% required a hysterectomy for persistent menorrhagia. The patient satisfaction rate was significantly higher in the hysterectomy group, but between 70% and 90% of the women were satisfied with the outcome of endometrial ablation at the 1 year follow-up even though an appreciable proportion of women required a second procedure. When the patients were followed-up at 4 years (74% of the original group responded), 34% of the endometrial ablation group required additional surgery (ablation and/or hysterectomy) compared with 0% in the
hysterectomy group. The percentage of ablation patients requiring hysterectomy increased by 4% to 18%, those requiring repeat ablation increased to 12% from 11.5%, and those requiring both was 3%. A higher percentage of ablation patients were amenorrheic at the later follow-up (45% versus 22%). Satisfaction rates were high for both groups, 80% in the ablation group versus 89% in the hysterectomy group, the difference reflecting retreatment. However, a significantly higher percentage of hysterectomy patients reported having improved general health compared with the ablation group (67% versus 38%).

Cost analyses have demonstrated that endometrial ablation by TCRE has lower procedural costs than hysterectomy. The direct and indirect costs of TCRE were significantly lower than those for hysterectomy. However, the difference in the costs of endometrial ablation and hysterectomy narrow when repeat ablation procedures, or even hysterectomy, are required. Questions remain about whether endometrial ablation lowers the threshold for intervention in women with less severe symptoms, thereby increasing its use and offsetting any cost savings.

**Conclusions**

For carefully selected patients with symptomatic, objectively confirmed menorrhagia and uterine size <12 week’s gestation (or 10 to 12 cm in length), endometrial ablation by TCRE, ELA, or TBEA is a safe alternative to hysterectomy. Endometrial ablation does not always result in amenorrhea, results may be limited simply to a reduction in the amount of menstrual blood loss each month. Patients undergoing endometrial ablation should be completed with childbearing. However, since the possibility of pregnancy remains after endometrial ablation, sexually active women of reproductive age should make every effort to prevent pregnancy. Endometrial ablation is associated with a low rate of complications and few major complications. It is possible, that after endometrial ablation, there may be difficulty in diagnosing endometrial cancer if it occurs in residual tissue. The effects of estrogen replacement therapy in postmenopausal women on residual endometrium are unknown. Presently, there is no objective, standardized measurement of menorrhagia, making comparison of treatments for abnormal uterine bleeding difficult. Total direct and indirect costs of endometrial ablation are significantly lower than those for hysterectomy. However, if future re-treatment or additional procedures are needed, the difference in cost between endometrial ablation and hysterectomy diminishes.

**Recommendations**

The medical community should establish guidelines to objectively measure menorrhagia. Additional data from well-designed, randomized controlled trials comparing the different techniques of endometrial ablation with drug therapies, hysterectomy, and each other should be undertaken to determine the most effective, safest, and least costly alternative to hysterectomy. Physicians should discuss risks and benefits of all options, including endometrial ablation techniques and hysterectomy, with each patient in order to choose the procedure which will best suit each individual patient’s needs. Because the uterus is still in place following endometrial ablation, the possibility of endometrial cancer still exists. There is also a concern that the diagnostic evaluation for endometrial cancer in women who have undergone endometrial ablation may be more difficult. Therefore, all women presenting with suspicious symptoms should be evaluated.

**References:**

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