Alternatives to Total Abdominal Hysterectomy

James E. Carter, MD, PhD

Key Words: Total abdominal hysterectomy, Laparoscopic-assisted vaginal hysterectomy, Laparoscopic supracervical hysterectomy, Laparoscopic myomectomy, Myolysis, Pretreatment GnRH.

INTRODUCTION

The alternatives to total abdominal hysterectomy include denial of service, vaginal hysterectomy, laparoscopic-assisted vaginal hysterectomy, laparoscopic supracervical hysterectomy, endometrial ablation, and myomectomy/myolysis.

There are 650,000 hysterectomies performed each year in the United States with 75% of these being abdominal hysterectomies and only 25% being vaginal hysterectomies.

The goal of healthcare reform should be to eliminate unnecessary hysterectomies and to convert abdominal hysterectomies to less invasive procedures.

Sixteen percent of all hysterectomies have been found to be inappropriate therapy with 25% of hysterectomies in younger women and 8% of hysterectomies in older women deemed unnecessary.[1]

Once the issue of the appropriateness of surgery has been dealt with, the issue becomes "Is the choice of abdominal hysterectomy appropriate? or is another therapy possible?"

DEFINITIONS

By way of definitions, an abdominal hysterectomy is removal of the uterus with or without the ovaries through an incision approximately 5 inches wide in the abdomen. A vaginal hysterectomy is the removal of the uterus with or without the ovaries through an incision in the vaginal area.

Medical Director, Women's Health Center of South Orange County, Inc.

Assistant Clinical Professor, University of California Irvine, College of Medicine, Department of Obstetrics & Gynecology.

Address reprint request to: James E. Carter, MD, PhD, FACOG, Mission Hospital Regional Medical Center, 26732 Crown Parkway, Suite 541, Mission Viejo, CA 92691, USA. Telephone: (714) 364-5802, Fax: (714) 364-2871, E-mail: 76053.304@compuserve.com

Endometrial ablation refers to hysteroscopic removal or destruction of the lining of the uterus down to the level of the uterine muscle.

Laparoscopic-assisted vaginal hysterectomy refers to the use of a laparoscope to allow the performance of hysterectomy through a vaginal means that would have otherwise required an abdominal approach. Laparoscopic supracervical hysterectomy refers to removal of the uterus utilizing a laparoscope but leaving the cervix in place. Laparoscopic myomectomy refers to removal of fibroid tumors from the uterus and subsequent removal of the fibroids from the pelvic cavity by morcellation or extraction using minimally invasive techniques. Myolysis refers to laparoscopic destruction of fibroid tumors using either laser or electrical energy so that they do not recur.

INDICATIONS

The indications for the various therapies are shown in **Table 1**. An abdominal hysterectomy is appropriate for fibroids, bleeding, pain and cancer. Laparoscopic supracervical hysterectomy is appropriate for fibroids, bleeding, and pain but is not appropriate for a cancer patient. Using this table, one can seek out an alternative to abdominal hysterectomy for the specific problem with which the patient presents.

CRITICAL PARAMETERS

The critical parameters for the surgical procedures that are alternatives to the abdominal hysterectomy are shown in **Table 2**.

An abdominal hysterectomy requires 4 to 5 days of hospital stay with a recovery time for patients of 6 to 8 weeks. Vaginal hysterectomy requires a hospital stay of only 1 to 2 days and 7 to 14 days of recovery time. Both the laparoscopic-assisted vaginal hysterectomy and laparoscopic supracervical hysterectomy have comparable lengths of stay and recovery times to vaginal hysterectomy. Endometrial ablation requires only 30 minutes to 1 hour to complete and a brief stay in an outpatient setting. It requires a recovery time of only 2 to 4 days. Myolysis has similar parameters to the endometrial ablation.

Conversion of abdominal hysterectomy to alternative procedures potentially could save 4 to 6 weeks of recovery time and 2 to 4 hospital days per patient. If these alternative procedures could be performed for all 487,500 patients currently being treated with abdominal hysterectomy, this would amount to almost 2 million hospital days saved per year.

A goal of healthcare reform should be to convert as many abdominal procedures as possible to the alternatives to obtain as much of the savings as possible both in patient recovery and in hospital days.

Dysfunctional Uterine Bleeding:

Dysfunctional uterine bleeding is a major cause for hysterectomy. Endometrial ablation can frequently replace hysterectomy for the treatment of bleeding disorders. This procedure takes 30 minutes to 1 hour to perform, requires only a few hours of observation in an outpatient setting postoperatively, and has a very short recovery time for the patient.

In order to ensure that patients are satisfied with the results of the procedure, however, it is important that the ablation be performed thoroughly.

It has been demonstrated that the success of endometrial ablation is dependent upon uniform destruction of the endometrium and superficial portion of the myometrium.[2] In order to ensure this uniform destruction of the endometrium, GnRH agonists are used for pretreatment for a period of one to three months. GnRH agonists prepare the endometrium by uniformly reducing thickness, decreasing edema, and avoiding pseudodecidual reaction usually present with other hormonal treatment.

Uterine Fibroids:

Uterine fibroids can be treated by myomectomy, myolysis, laparoscopic-assisted vaginal hysterectomy, laparoscopic supracervical hysterectomy, or vaginal hysterectomy. It has been shown that uterine fibroids contain estrogen receptors and are responsive to hormonal manipulation. Since GnRH agonists induce a state of hypoestrogenism, they are effective in treating uterine fibroids. In fact, uterine fibroid volume will decrease by an average of 57% over a six-month course of treatment by GnRH agonists.[3]

If uterine fibroids are causing menorrhagia with anemia, uterine pressure or pain, or are otherwise causing symptoms, then treatment is appropriate. Twenty-seven percent or 175,000 of the hysterectomies performed in the United States annually are performed for fibroids. In addition, myomectomy is performed in 28,000 patients per year.

Because GnRH agonists shrink the uterus and fibroids, it is possible to administer a GnRH agonist for two months and increase the frequency of vaginal hysterectomy over abdominal hysterectomy. In fact, in one study, 76% of GnRH agonist-treated patients had a vaginal hysterectomy versus 16% of nontreated patients.[4] The use of GnRH agonists can make possible a conversion from abdominal hysterectomy to either vaginal hysterectomy or laparoscopic-assisted vaginal hysterectomy or laparoscopic supracervical hysterectomy.

Laparoscopic myolysis can also be proposed as an alternative to abdominal hysterectomy in cases of large or multiple intramural fibroids in women over 40 who do not desire to bear children but who wish to avoid hysterectomy.[5,6]

Laparoscopic myolysis is performed by inserting a laser fiber or bipolar electrosurgery electrode into the fibroid. This is performed after pretreatment by GnRH agonist for a period of two to three months. After myolysis has been performed, a full six-month course of GnRH agonist treatment is completed. As a result of this therapy, uterine volume can be reduced by 41% within one year.[5] In 200 cases using a combination of laser and GnRH agonists, a reduction in volume of 70% of the fibroid size was accomplished at one year.[6]

Myolysis, therefore, can be considered an effective therapy for the reduction of fibroid size and can be proposed as an alternative to myomectomy or hysterectomy in selected patients.

Laparoscopic myomectomy can also be accomplished. In one study, 92 myomas were removed in 43 patients. To avoid the need for transfusion, the patients were systematically treated preoperatively with GnRH agonist.[7]

Endometriosis:

For treatment of pain, both laparoscopic surgery with procedures such as laparoscopic excision of endometriosis, laparoscopic uterosacral nerve vaporization, and laparoscopic presacral neurectomy can be performed to prevent the need for hysterectomy. In one study, GnRH agonists were given for six months for the treatment of endometriosis without surgical intervention. These patients were followed for a period of five years, and it was found that 46.6% were cured by the six-month course of GnRH agonist therapy.[8]

In patients with pelvic pain and endometriosis, a trial of medical therapy with GnRH agonists is warranted because long-lasting benefits occur in about half of the women treated. Half of these patients, however, will have recurrence of the disease, requiring retreatment or surgical intervention.[8]

Table 1.
Alternatives to abdominal hysterectomy.
Indications for uterine treatment.

PROCEDURE	Fibroids	Bleeding	Pain	Cancer	Descensus
Abdominal hysterectomy	✓	✓	✓	✓	
Vaginal hysterectomy	✓	✓		✓*	✓
LAVH	✓	✓	✓	✓*	
LSH	✓	✓	✓		
Endometrial ablation/resection	✓ (submucous)	✓			
Myomectomy/ myolysis	✓				

*with laparoscopic node dissection.

CONCLUSION

In conclusion, pretreatment with GnRH agonist has been demonstrated to be an effective means to allow many who previously would have required abdominal surgery to convert to less traumatic alternatives. These alternatives would permit a great savings for the patient in hospital time, pain, suffering, and time off work as well as decreasing the risks of surgery in terms of infection, blood loss, and complications.

Pretreatment with GnRH agonists can have the following effects:

1) Conversion of abdominal to vaginal surgery.
2) Conversion of abdominal to laparoscopic-assisted vaginal surgery.
3) Conversion of abdominal hysterectomy to endometrial ablation.
4) Elimination of the need for surgery altogether.
5) Conversion of need for hysterectomy to myomectomy or myolysis.
6) Conversion of abdominal surgery to laparoscopic procedures.

The integration of GnRH agonists into our treatment armamentarium holds forth an opportunity for great benefits to our patients in our quest to perform more minimally invasive and less traumatic surgical procedures.

References:

1. Bernstein SJ, et al. The appropriateness of hysterectomy: a comparison of care in seven health plans. Health Maintenance Organization Quality of Care Consortium. *JAMA*. 1993;269:2398-2402.

2. Valle RS. Endometrial ablation for dysfunctional uterine bleeding: role of GnRH agonists. *Int J Gynecol Obstet*. 1993;41:3-15.

3. Adamson GD. Treatment of uterine fibroids with GnRH analogues: current findings with gonadotropin-releasing hormones. *Am J Obstet Gynecol*. 1992;166:746-751.

4. Stoval TG, Ling FW, Henry LC, Woodruff MR. A randomized trial evaluating lupralite acetate before hysterectomy as treatment for fibroids. *Am J Obstet Gynecol*. 1991;164:1420-1423.

5. Nisolle M, et al. Laparoscopic myolysis with the Nd:YAG laser. *J Gynecol Surg*. 1993;9:95-100.

6. Goldfarb HA. Nd:YAG laser laparoscopic coagulation of symptomatic myomas. *J Reprod Med*. 1992;37:636-638.

7. Dubuisson JB. Myomectomy by laparoscopy: a preliminary report of 43 cases. *Fertil Steril*. 1991;5:827-30.

8. Waller KG, Shaw RW. GnRH analogues for the treatment of endometriosis: long-term follow-up. *Fertil Steril*. 1993;59:511-515.

Table 2.
Alternatives to total abdominal hysterectomy.
Critical parameters for surgical procedures.

PROCEDURE	Length of Stay	Surgery Time	Recovery Time	Complication Rate
Abdominal hysterectomy	4-5 days	1-2 hours	6-8 weeks	10-15%
Vaginal hysterectomy	1-2 days	1-2 hours	7-14 days	3-7%
LAVH	1-2 days	1.5 to 3 hours	14 days	3-7%
LSH	1 day	1-2 hours	7-14 days	1-4%
Endometrial Ablation	Less than 1 day	30 minutes to 1 hour	2-4 days	1-2%
Myomectomy/ Myolysis	Less than 1 day	1-2 hours	2-4 hours	Less than 3%