

## LAPAROSCOPICALLY - ASSISTED VAGINAL HYSTERECTOMY : REPORT OF 15 CASES

S. ALBORZI, M.D., M.E. PARSANEJAD, M.D., AND M.S.  
ARDEKANI, M.D.

*From the Department of Obstetrics and Gynecology, Shiraz University of Medical Sciences, Shiraz, I.R.  
Iran.*

### ABSTRACT

Laparoscopically-assisted vaginal hysterectomy (LAVH) was performed in fifteen patients without invasive cancer. Indications for hysterectomy were myomas, abnormal uterine bleeding unresponsive to hormonal treatment and dilatation and curettage, chronic pelvic pain with first degree uterine prolapse and possible adenomyosis, and dysplasia and ovarian cyst in postmenopausal years. No significant complication was observed during the operation or postoperatively. This report proves that minimally invasive procedures (LAVH) can replace conventional hysterectomies in experienced hands.

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### INTRODUCTION

Laparoscopic surgery is rapidly becoming a popular alternative to traditional procedures for a variety of gynecological disorders. Two decades ago improvements in operative laparoscopy were developed.<sup>1</sup> Operative laparoscopy in gynecology has become progressively well established during the last decade and today most gynecological surgical procedures can be performed by this technique.<sup>2,3</sup> Hysterectomy via the laparoscope has been performed for benign and malignant disease of the cervix and uterus.<sup>4,6</sup> The trend toward laparoscopic surgery will be increased, as more gynecologists become familiar with these new techniques.

Laparoscopically assisted vaginal hysterectomy (LAVH) was first performed in our department in July 1994. We present here the results of our first 15 operations.

### PATIENTS AND METHODS

This report consists of the first 15 laparoscopically-assisted vaginal hysterectomies performed in the Department of Obstetrics and Gynecology, Namazee Hospital, Shiraz.

The patients were operated between July 1994 and February 1995. The indications for surgery were myomas (n=2), menometrorrhagia or postmenopausal bleeding unresponsive to medical therapy and D&C (n=7), dysmenorrhea and pelvic relaxation with first degree uterine prolapse and possible adenomyosis (n=4), a case with severe cervical intraepithelial neoplasia, and one postmenopausal patient with ovarian cyst. Age of patients ranged between 35 and 70 years. All patients underwent preoperative examinations and paraclinical work-up to exclude invasive cancer. Previous laparotomy was not a contraindication for LAVH.

We chose patients with a uterine size of less than 13 weeks of pregnancy.

All operations were performed under general anesthesia with endotracheal intubation. Laparoscopically - assisted vaginal hysterectomy was performed using video-laparoscopic techniques. A 10 mm laparoscope (Wolfe GmbH, Germany) was introduced through the umbilicus, and two 5mm and one 10 mm trocar sleeve was inserted suprapubically to permit accessory instruments. The abdominal and pelvic cavity was examined thoroughly to exclude other pathology. All cases started with bipolar coagulation of the round ligament and transecting it to open

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Table I. Results of laparoscopically-assisted vaginal hysterectomy (LAVH) in 15 patients.

Patient No.	Age (years)	Indication	Operation	LAVH time (min)	Hospital stay (days)	Complications	Blood loss (mL)
1	50	pelvic relaxation*	LAVH, AP repair	100	3	none	200
2	50	pelvic relaxation*	LAVH, BSO***, AP repair	180	3	none	500
3	55	pelvic relaxation*	LAVH, AP repair	100	3	none	200
4	50	AUB**	LAVH, AP repair	150	3	none	100
5	35	cervical dysplasia	LAVH, USO****	150	3	none	300
6	46	myoma, AUB	LAVH	180	3	none	400
7	47	AUB	LAVH, BSO	180	5	none	500
8	54	AUB	LAVH	120	3	hypotension	200
9	40	AUB	LAVH, AP repair	200	5	none	500
10	43	AUB	LAVH, AP repair	180	5	none	800
11	70	adnexal cyst	LAVH, BSO	100	3	none	200
12	42	AUB	LAVH, AP repair	90	6	Vaginal vault cellulitis	100
13	50	pelvic relaxation	LAVH, AP repair	180	5	none	800
14	40	myoma, AUB	LAVH, AP repair	180	4	none	800
15	41	AUB	LAVH AP repair	120	3	none	250

\* with first degree prolapse of uterus and dyspareunia

\*\* Abnormal uterine bleeding

\*\*\* Bilateral salpingo-oophorectomy

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the broad ligament. The bladder was separated from the anterior wall of the uterine surface using sharp and hydrodissection. Hydrodissection was performed by using a combination of suction and irrigation with the tube connected to an endo-irrigator (Wolfe, Germany). If adnexa were removed (N=7), the infundibulopelvic vessels and mesosalpinx were coagulated and then cut, and if they were preserved (N=23), the utero-ovarian ligament and fallopian tube were divided after dissection with bipolar coagulation using 50 watts. After creation of the bladder flap, the upper part of the broad ligament was opened and cut, and the uterine vessels were skeletonized, coagulated and divided. Then the posterior peritoneum was opened and the

uterosacral and upper part of the cardinal ligament were coagulated and transected. The uterus along with the tubes and ovaries (if indicated) was removed vaginally, after opening the vagina and suturing and cutting the lower cardinal ligament through the vaginal route.

The inferior parts of the cardinal ligaments were sutured to the lateral part of the vaginal vault and the vagina itself was closed with 1-0 chromic catgut. In four cases an intraabdominal drain was inserted through the vaginal vault and removed a day after surgery. In 9 patients anterior and posterior repair was done to treat pelvic relaxation and stress urinary incontinence.

## RESULTS

Table I summarizes the data of the 15 patients. The mean age of the patients was 47.5 years (range 35-70 years). Ten patients had first degree uterine prolapse and 5 patients had no sign of it.

No cases assigned to LAVH were cancelled or converted to laparotomy for hemostatic or other technical difficulties.

The mean duration of the procedure was 147 minutes (range between 90-200). Total estimated blood loss was between 100 to 800 mL (mean 387 mL). One patient (number 7) developed two episodes of hypotension postoperatively which was treated with fluid therapy. There was no bleeding from the intraabdominal drain and ultrasound examination of the pelvis and retroperitoneum was negative for hematoma. One patient developed vaginal vault cellulitis which was treated with intravenous antibiotics. Four patients needed postoperative blood transfusion due to a low hemoglobin level (Hb < 10 g/dL). No intraabdominal infection or thromboembolic complication was seen. All specimens were subjected to pathological examination.

Table II shows the pathology results in 15 patients. There were two specimens with myoma, three with adenomyosis, two with polyp, two with simple cyst of the ovary and one with severe dysplasia of the cervix. The mean duration of hospital stay was 3.8 days (range 3-6 days). Postoperative pain was minimal and there was no need for analgesics on the second day after surgery. All the patients went back to full daily activity from 14 to 21 days after surgery.

## DISCUSSION

This is the first report of LAVH from southern Iran. After appropriate training in advanced operative laparoscopy one can proceed to more complex surgery. Many gynecologists ask why LAVH is superior to transabdominal hysterectomy, but there is general agreement that if one is able to convert an abdominal hysterectomy to a vaginal hysterectomy with the assistance of the laparoscope, it is beneficial for the patient.<sup>7</sup> There are patients who would not be good candidates for vaginal hysterectomy in the opinion of most gynecologists. Our fifteen patients were very difficult cases for vaginal hysterectomy, because they did not have a high degree of uterine prolapse. Because of the different sizes (range between normal to 12 weeks of gestation) and positions of the uterus and conditions of the ovaries, operating time and estimated blood loss varied among the patients. The mean operation time in other reports are similar to our study, but the amount of blood loss is less.<sup>7-10</sup> Some of our patients had previous pelvic surgery like cesarean section or tubal ligation with some pelvic adhesions, but it was not difficult to perform the operation.

Table II. Pathology results.

Patient no.	Pathological diagnosis
1	Chronic cervicitis
2	Simple cyst of right ovary, cervicitis
3	Squamous metaplasia of cervix
4	Endometrial polyp, cervicitis
5	Severe dysplasia of cervix, corpus luteum cyst
6	Myoma
7	Cervicitis, follicular cyst of left ovary
8	Cervicitis, atrophic endometrium
9	Adenomyosis, cervicitis
10	Adenomyosis, cervicitis
11	Simple cyst of left ovary, cervicitis
12	Endometrial polyp, cervicitis
13	Cervicitis with metaplasia
14	Myoma
15	Adenomyosis, cervicitis

Although some authors note that previous pelvic surgery and adhesions are contraindications for LAVH, but the most limiting factor is probably uterine size.<sup>9-13</sup> The main reason why the operation is prolonged is due to bipolar coagulation of pedicles. Using the endoscopic linear stapler is associated with less tissue reaction, necrosis, postoperative fever and a shorter operation time,<sup>10</sup> but it is expensive and ureteral damage with its use has been reported.<sup>14</sup>

Our initial experience with LAVH is promising. With further experience, operative time and blood loss will be decreased. Patients were satisfied with this technique due to minimal postoperative pain, short recovery time and its cosmetic result. Further clinical trials will be necessary for a full evaluation of the method. This study suggests that experienced clinicians and laparoscopists can pick up patients who would traditionally be treated by abdominal hysterectomy and convert them to vaginal hysterectomy by means of operative laparoscopic assistance.

## REFERENCES

1. Semm K, Mettler L: Technical progress in pelvic surgery via

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- operative laparoscopy. *Am J Obstet Gynecol* 138: 121-7, 1980.
2. Gomel V: Operative laparoscopy, time for acceptance. *Fertil Steril* 52: 1-11, 1989.
3. Reich H: New techniques in advanced laparoscopic surgery. *Clin Obstet Gynecol* 3: 655-81, 1989.
4. Reich H, Decaprio J, McGlynn F: Laparoscopic hysterectomy. *J Gynecol Surg* 5: 213-6, 1989.
5. Childers JM, Surwit EA: Combined laparoscopic and vaginal surgery for the management of two cases of stage I endometrial cancer. *Gynecol Oncol* 45 (1): 46-51, 1992.
6. Querleu D: Laparoscopically assisted radical vaginal hysterectomy. *Gynecol Oncol* 51(2): 248-54, 1993.
7. Nezhat F, Nezhat C, Gordon S, Wilkens E: Laparoscopic versus abdominal hysterectomy. *Obstet Gynecol Survey* 48 (1): 39-40, 1993.
8. Minelli L, Angiolillo M, Caione C, Palmara V: Laparoscopically assisted vaginal hysterectomy. *Endoscopy* 23 (2): 64-6, 1991.
9. Boike GM, Elfstrand EP, Delpriore G, Schumok D, Holley HS, Laurin JR: Laparoscopically-assisted vaginal hysterectomy in a university hospital: report of 82 cases and comparison with abdominal and vaginal hysterectomy. *Am J Obstet Gynecol* 168 (6): 1690-1701, 1993.
10. Langenbrek A, Oskar JS, Umes A: Laparoscopic hysterectomy: initial experience. *Acta Obstet Gynecol Scand* 71: 26-29, 1992.
11. Wood C, Maher P: Minimally invasive gynecological surgery. *Aus Fam Physician* 21 (6): 772-73, 777-9, 782, 1992.
12. Woss E, Steel MR, Evian J: Laparoscopic hysterectomy, a valid alternative to conventional surgery. *Br J Hospital Med* Nov. 3-16, 599: 577-9, 1993.
13. Jones RA: Laparoscopic hysterectomy—a technique. *Aust NZ J Obstet Gynecol* 33 (3): 290-5, 1993.
14. Woodland MB: Ureter injury during laparoscopic assisted vaginal hysterectomy with the endoscopic linear stapler. *Am J Obstet Gynecol* 167(9): 756-7, 1992.