Laparoscopically Assisted Vaginal Hysterectomy : The Initial 10 Cases, Srinagarind Hospital Experience

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Background: Laparoscopically surgery has become more and more popular during recent years. Srinagarind hospital has been offering laparoscopic hysterectomy since February 1996.

Objective: To study patient profiles in the initial 10 cases of laparoscopically assisted vaginal hysterectomy (LAVH) at Srinagarind Hospital

Study design: A retrospective descriptive study

Setting: Department of Obstetrics and Gynecology, Faculty of Medicine, Srinagarind Hospital, Khon Kaen University

Subjects: 10 cases with LAVH between February 1996 and July 1996

Main outcome measures: Operating times, techniques for LAVH and complications

Result: Indication for LAVH. 8 cases were myoma uteri, 2 cases were recurrent DUB. The average operating time was 2 hours 27 minutes per case. One case had torn dome of urinary bladder during surgery, repaired by laparoscopic suturing.

Conclusion: LAVH is a new technique for gynecologic surgery. It needs gynecologists with more training and requires further study to determine the effectiveness of the procedure

Key words: LAVH
Introduction

At present in medicine there is an explosion of interest in minimally invasive surgical procedures. In Gynecology it is now possible to perform adenexal removal\textsuperscript{1-3}, myomectomy\textsuperscript{4}, presacral neurectomy\textsuperscript{5}, pelvic lymphadenectomy\textsuperscript{6} and even hysterectomy with laparoscopic techniques\textsuperscript{7-9}. The advantage of new techniques are shorter hospital stay\textsuperscript{10}, and recovery period, less post-op morbidity, reduced postoperative analgesia requirement\textsuperscript{11} and earlier return to economic activity as well as improved cosmetic and low risk of adhesion formation\textsuperscript{12-14}.

Srinagarind hospital, Khon Kaen University has offered these techniques to Northeast people since February 1996 including adhesiolysis, laparoscopic ovarian cystectomy, laparoscopic uterine nerve ablation (LUNA) and laparoscopically assisted vaginal hysterectomy (LAVH). This report reviews our experience with the initial 10 cases in of laparoscopically assisted vaginal hysterectomy.

Materials and Methods

Between February 1996 - July 1996, we performed 10 cases of laparoscopically assisted vaginal hysterectomy at Srinagarind hospital, Khon Kaen University. The patient profiles are shown in Table 1. The most common indications for LAVH was myoma uteri, in 8 cases and 2 cases of recurrent dysfunctional uterine bleeding (DUB).

Techniques

After general endotracheal anesthesia, patient was placed in dorsal lithotomy position, Foley catheter was retained and a uterine elevator inserted into uterine cavity. A transverse subumbilical incision 10 mm was carried out, using 2 towel clips to grasp and evert the base of the umbilicus, raising it from the abdominal structure then inserting the Verre needle at 45° from horizontal plane. After testing for the proper position of the Verre needle, 1.5-2 liters of CO\textsubscript{2} gas was insufflated. The Verre needle was removed and a primary trocar was inserted in the port in the same direction as the Veress needle. The trocar stylet was removed and laparoscope inserted. Two addi
tional 5 mm incision were made at the lower quadrant lateral to the inferior epigastric artery and accessory trocars were inserted under direct laparoscopic vision. The patient's position was changed to drop trentelenberg and pelvic organ explored. Both ureters were identified clearly before operative procedures. The round ligaments were descissed by bipolar electric cauteryation and cut with monopolar scissors and then the anterior leaves of broad ligament separated by monopolar scissors. Infundibulopelvic ligaments or ovarian ligaments and fallopian tubes were divided by individual techniques e.g. bipolar electric cauteryation, automated stapling device (Endo GLA) or tied with extracorporeal knot. Skeletonized uterine vessels and divided by individual techniques as above, then pushed vesicouterine fold downward to avoid bladder injury. The sponge forceps with few pieces of gauze were inserted into the anterior fornix in order to make it easier to identify the vaginal wall and anterior colpotomy was done by laparoscopic monopolar scissors. The rest of the operation were performed vaginally, the cervix was grasped by 2 tenaculums and pulled downward, incised around the cervix. Paracervical ligaments and uterosacral ligaments were clamped, cut and sutured ligated both sides, then the uterus was removed vaginally (only in one case where the patient had a 16 week size uterus, we used the morcellation technique). Suture of vaginal vault. We used laparoscope to check the bleeding point again. Suction irrigation was carried out. We removed accessory trocar sleeves under laparoscopic vision, then primary trocar sleeves was finally removed. Suture of abdominal incisions with 2-0 chromic catgut.

Results

During 6 month experience of LAVH, the average operating time was 2 hours and 27 minutes per case, the first case took a great deal of time, 4.15 hours (Table 1). As we gained experience the operating time was reduced. The average postoperative hospital stay time was 5.2 days (Table 2), but in case no 5, the hospital stay was 14 days because there was a tear of dome urinary bladder during the operation because of adhesion between bladder and lower part of uterus due to previous anterior colpotamphoplasty and posterior colpoperineorrhaphy.

\textsuperscript{1} Srinagarind Med J 1997; 12(4)
### Table 1 Patient profiles

<table>
<thead>
<tr>
<th>Patient number</th>
<th>Age (yrs)</th>
<th>Indication</th>
<th>Uterine size (weeks)</th>
<th>Operation</th>
<th>Techniques</th>
<th>Operating time (hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>53</td>
<td>Myoma with hypermenorrhea</td>
<td>10</td>
<td>LAVH+BSSO</td>
<td>Suture</td>
<td>4.15</td>
</tr>
<tr>
<td>2</td>
<td>49</td>
<td>Myoma with hypermenorrhea</td>
<td>8</td>
<td>LAVH+BSSO</td>
<td>Suture</td>
<td>3.00</td>
</tr>
<tr>
<td>3</td>
<td>43</td>
<td>Myoma with pelvic pain</td>
<td>10</td>
<td>LAVH</td>
<td>Suture</td>
<td>2.15</td>
</tr>
<tr>
<td>4</td>
<td>42</td>
<td>Myoma</td>
<td>14</td>
<td>LAVH</td>
<td>B/Mono</td>
<td>2.50</td>
</tr>
<tr>
<td>5</td>
<td>46</td>
<td>Myoma with hypermenorrhea</td>
<td>16</td>
<td>LAVH+BSSO</td>
<td>Staples</td>
<td>2.30</td>
</tr>
<tr>
<td>6</td>
<td>51</td>
<td>Myoma with hypermenorrhea</td>
<td>10</td>
<td>LAVH+BSSO</td>
<td>B/Mono</td>
<td>2.30</td>
</tr>
<tr>
<td>7</td>
<td>36</td>
<td>Recurrent DUB</td>
<td>Normal</td>
<td>LAVH</td>
<td>B/Mono</td>
<td>2.15</td>
</tr>
<tr>
<td>8</td>
<td>46</td>
<td>Myoma with hypermenorrhea</td>
<td>10</td>
<td>LAVH+BSSO</td>
<td>B/Mono</td>
<td>1.45</td>
</tr>
<tr>
<td>9</td>
<td>38</td>
<td>Myoma with right ovarian cyst</td>
<td>8</td>
<td>LAVH+BSSO</td>
<td>Staples</td>
<td>2.10</td>
</tr>
<tr>
<td>10</td>
<td>41</td>
<td>Recurrent DUB</td>
<td>Normal</td>
<td>LAVH</td>
<td>B/Mono</td>
<td>1.00</td>
</tr>
</tbody>
</table>

B = Bipolar electric cautery  
Mono = Monopolar electric cautery  
BSSO = Bilateral salpingo-oophorectomy  
50 = Salpingo-oophorectomy

### Table 2 Laporoscopically assisted vaginal hysterectomy: clinical series

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No of cases</td>
<td>75</td>
<td>100</td>
<td>82</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td>Uterine size (weeks)</td>
<td>41-462(159)</td>
<td>(190)</td>
<td>-</td>
<td>84-474(191)</td>
<td>(1)</td>
</tr>
<tr>
<td>Techniques</td>
<td>B/Mono</td>
<td>Bipolar</td>
<td>Staples</td>
<td>Suture</td>
<td>B/Mono(5)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staple</td>
<td>Suture</td>
<td></td>
<td>Staple</td>
</tr>
<tr>
<td>Success rate</td>
<td>100%</td>
<td>95%</td>
<td>97%</td>
<td>87%</td>
<td>100%</td>
</tr>
<tr>
<td>Laparotomy</td>
<td>0%</td>
<td>5%</td>
<td>3%</td>
<td>13%</td>
<td>0%</td>
</tr>
<tr>
<td>Major complication</td>
<td>Bleeding(5)</td>
<td>Bladder(2)</td>
<td>Uterus(1)</td>
<td>Bladder(1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2)</td>
<td>Uterus(1)</td>
<td></td>
<td>Bowel(1)</td>
<td></td>
</tr>
<tr>
<td>Mean surgical time (mins)</td>
<td>12±4</td>
<td>165</td>
<td>152</td>
<td>191±</td>
<td>147(125)±**</td>
</tr>
<tr>
<td>Hospital stay (days)</td>
<td>2.2</td>
<td>4.4</td>
<td>2.6</td>
<td>2.0</td>
<td>5.2</td>
</tr>
</tbody>
</table>

* = number of patients, used electric cautery technique  
** = average operating time that used only electric cautery technique

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Discussion

Laparoscopic surgery is a new technique in gynecologic operation which requires a well trained gynecologist and team. The first case of our experience in LAVH took more time compared to conventional laparotomy and vaginal hysterectomy but when the operating team gained experience the operating time was reduced. Uterine size determines operative difficulties, the smaller the lesser. We had a torn dome of bladder in one case (11.1%). In our opinion, electric cautery seems to be a safe and appropriate technique for developing country due to the lower cost of instruments. Daniell JD, et al (18) reported his experience in using an automatic staple device to divided infundibulopelvic ligaments and uterine vessels which requires less time than bipolar electric cautery but cost more.

Compared with Padiash 199216, Mage 199217, Lee18 and Davis 1993 19 (Table 2) who used single and combined techniques for LAVH, we found no obvious difference in the success rate, or major complications but mean surgical times by electric cautery in our series was less than in Mage's study.

Follow up of the 10 patients after a 1 month period showed that everyone appreciated this new operative technique operation because of the small scar at the abdomen, shorter hospital stay and reduced analgesic requirement.

While the findings of this study suggest the potential advantages of LAVH, future studies will be required to determine the effectiveness of the procedure

Conclusion

We reported the initial 10 cases of LAVH in Sinagarind hospital experience. Electric cautery technique was used in most of the cases. This technique seems to be of low cost and probably appropriate for our country.

References

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