Laparoscopic hysterectomy: advantages and disadvantages

A.L. Gurin, A.E. Kostiahin, D.O. Kuchuk

Abstract
Hysterectomy is a surgical removal of the uterus. There are different techniques and indications for every procedure. We want to share our clinical experience in laparoscopic hysterectomy surgery during 9 years of work, since our Regional Laparoscopic Centre was found. We consider that laparoscopic approach is the method of choice in benign gynecologic conditions.

Key words: laparoscopy, hysterectomy, uterine leiomyoma

Introduction
Hysterectomy is a surgical removal of the uterus. This operation is one of the most common in gynecologic practice. Hysterectomy may be total, during this procedure removing of the body and cervix is performed, partial (also called subtotal or supracervical hysterectomy) when the uterine body is removed and the cervix leaves intact, and radical (usually performed in oncologic practice) which is indicated for cancer – a complete removal of the uterus, cervix, upper vagina, and parametrium is performed [3].

Indications for hysterectomy include various conditions such like:
- benign tumors of the uterus – uterine myoma uncontrolled by conservative therapy (severe symptoms, large size of the fibroid, rapid growth);
- endometrial diseases (some kinds of hyperplasia, recurrence after ablation of endometrium);
- reproductive system cancer (uterine, cervical, endometrium, ovarian);
- genital endometriosis localized in myometrium (adnomyosis) when therapeutical and other surgical methods of treatment are ineffective;
- severe chronic pelvic pain after pharmaceutical or other surgical options have been exhausted.
- several forms of genital prolapse;
- obstetric conditions associated with acute hemorrhage [1, 2].

Technique
Hysterectomy can be performed in different ways. The traditional technique is abdominal incision or laparotomy. The most popular surgical accesses are transverse (Pfannenstiel) incision, similar to the incision made for a caesarean section and lower-midline abdominal incision. These surgical accesses are the method of choice in conditions with severe adhesions, disturbed pelvic anatomy, urgent conditions, suspicion of malignant process, or verified cancer. An open hysterectomy provides the most effective way to explore the abdominal cavity and perform complicated surgeries [4].

Vaginal hysterectomy is usually performed in cases of genital prolapse. It’s performed entirely through the vaginal canal and has clear advantages over abdominal surgery such as fewer complications, shorter hospital stays and shorter healing time. Sometimes it’s accompanied by reconstruction of pelvic floor with the use of allotransplants (polypropylene meshes).

With the development of the laparoscopic techniques total laparoscopic hysterectomy (TLH) and laparoscopic subtotal hysterectomy (LSH) became a good alternative for the traditional methods of surgery. During this technique a surgeon operate through three small abdominal incisions where digital camera and two instrumental ports are installed. The assistant work with a uterine manipulator, changes the uterus position and helps to visualize the structures of pelvis, extracts the uterus from the abdomen while TLH procedure [6]. Usually if the size of uterus is not bigger than equivalent of 10-weeks of pregnancy uterus it can be extracted from the abdomen directly through the vaginal canal. When the size of uterus is bigger than equivalent of 10-weeks of pregnancy uterus, or the uterus has atypical shape when it’s incompatible to extract uterus through the vaginal canal it is cut into stripes with a special tool called morcellator and is extracted from the abdomen partially. Performing LSH procedure with every size of uterus leads to morcellation [7].
Our practice

Grodno Regional Gynecologic Laparoscopic Centre was found in 2002 based on department of gynecology of Grodno State Clinical Hospital Nr. 4 in participation with Obstetrics And Gynecologic Chair Of Grodno State Medical University. During 2002-2011 years we performed 5783 laparoscopic operations. During the last year we performed 686 laparoscopic operations, that amounted 74% of the whole abdominal operations we performed this year. We want to share our operational experience according to laparoscopic hysterectomy.

Fig. 1. Performing a incision of plica vesicouterina (Left round ligament and lig. suspensorium ovarii are coagulated and cutted, wide uterine ligament dissected and coagulated)

Fig. 2. Equally on the right side

During 9 years from the foundation of our centre we performed 542 laparoscopic hysterectomy surgeries. Among them 364 laparoscopic total hysterectomy surgeries and 178 laparoscopic subtotal hysterectomy surgeries. Laparoscopic approach amounted 31% of hysterectomies performed.

Fig. 3. Cutting the vaginal wall with monopolar coagulator

Fig. 4. Corpus uteris is removed. After extraction vaginal vault is closed by 2-3 absorbable sutures

The duration of total laparoscopic hysterectomy varied 40-90 minutes (average 65 minutes), laparoscopic subtotal hysterectomy varied 50-100 minutes (average 75 minutes). The use of electromechanic morcellator elongated the duration of procedure 20-25 minutes more. Total blood loss was 50-300 ml (average blood loss 125 ml).

Results

We provided analysis of 6 months of postoperative period in patients after laparoscopic hysterectomy (LH) and abdominal hysterectomy (AH).

1 month after LH patients less complained of pain and vaginal discharge (up to 52% of patients) than patients after AH (up to 70%). Anemia occurred less after LH (up to 17%), then after AH (up to 28%). But the main postoperative complication of LH was vaginitis (developed in 71% of patients) in compare with AH (only 2%). We consider that vaginitis is caused by vaginal walls in-
jury while extracting the uterus from the abdomen during TLH procedure.

3 month after LH patients less complained of pain (up to 27%) than patients after AH (up to 74%). Anemia occurred less after LH (up to 45%), then after AH (up to 10%). And there were no signs of vaginitis in both groups in this period.

6 month after LH patients less complained of pain (up to 8%) than patients after AH (up to 51%). And there were no signs of anemia and vaginitis in both groups in this period.

During 9 years of our work we had several cases of severe complications of laparoscopic hysterectomy. There were:
- vaginal vault bleeding – 0.14%;
- infundibulopelvicum ligament bleeding – 0.017%;
- intraoperational ureter injury – 0.034% (in one of these cases symptoms of urological disorders occurred in 1 month after procedure);
- gastrointestinal tract injury – 0.034%.

Although the possibility of complications laparoscopic hysterectomy has its advantages to traditional abdominal hysterectomy. This technique provides less traumatical procedure, good cosmetic effect – small trocar incisions close with cosmetic absorbable sutures, decrease frequency and severity of complications, shortens the hospitalization period, makes the treatment more cheaper.

As a result more than 75% of operations are performing with a use of laparoscopic technique. Average term of hospitalization after laparoscopic procedures is rather shorter then after traditional surgery. Terms of hospitalization in patients with TLH and SLH varied from 4 to 7 days – average term was 5.5 days. In compare, average term of hospitalization for traditional AH in our clinic was 7.4 days. Laparoscopic technique should be developed and possibly it will be a serious alternative for traditional surgery methods, or even substitute it.

References

Andrei Leonidovich Gurin
Grodno State Medical University
Gorky Str. 80, Grodno, Republic of Belarus