Laparoscopic Hysterectomy and Decision When and Which Surgical Approach Is Indicated?

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1. INTRODUCTION

According to available medical history data it is believed that the first hysterectomy was made by Fabricius Haldanus (1560-1624). The first documented supracervical hysterectomy was done in 1843 by the Charles Clay. The first documented successful extripation of the uterus performed Wilhelm Alexander Freund 1878, total abdominal hysterectomy is described in 1894 by Altein Mackenrodt, and expanded by the famous Ernst Wertheim 1897 (1, 2, 3).

Subtotal hysterectomy was standard operating procedure in the forties of last century, but was rejected for fear of cancer of the remaining cervical tissue.

Traditionally, hysterectomy is performed through the abdominal or vaginal. Although vaginal surgery is actually a conservative and pioneers of minimally invasive surgery, most surgeons still prefer the abdominal route.

Technical innovations of instruments and improved anesthesia have enabled the laparoscopic hysterectomy in surgery. The first laparoscopic hysterectomy was performed by Henry Reich 1989, unaware that he introduced us to a new technology chapter-robotics (4).

In the eighties of the twentieth century in the U.S. about 70-80% of all hysterectomies was done by the abdominal approach (1), in order to compare with 2009 in report by ACOG was approximately 66% of abdominal hysterectomy, vaginal hysterectomy 22%, and only 12% of total laparoscopic hysterectomy (TLH) (2).

In Germany, which still has the reputation of the old surgical school, the proportion of vaginal hysterectomies varied between 9 and 90% (average about 50%), however, thanks to continuous propagation of laparoscopy by Semma and Ratta, laparoscopy has become not only inevitable, but in some centers also the predominant surgical technique (5).

2. INDICATIONS FOR Hysterectomy

The benign indications for hysterectomy include: hypermenorrhea, menometrorrhagia with resultant anemia, miomatosus uterus, endometriosis/adenomyosis, prolapsed uterus, etc.

According to ACOG indications for hysterectomy were: miomatosus uterus in 40.7% of cases, endometriosis (adenomyosis) in 17.7%, and uterine prolapse in 14.5% patients (2).

Despite the fact that today there are successful treatment options for recurrent, dysfunctional bleeding in pre and perimenopausal, thanks to conservative treatment (LNG-IUD "Mirena") and/or minimally invasive surgery (hysteroscopy ablation of endometrial polyps, resection of submucosal fibroids, electro coagulation of the endometrium, etc.), hysterectomy is still a treatment option for patients who are more satisfied than the less invasive but also less durable solutions (6).

Specifically, the work of Middleton and colleagues included 30 randomized, controlled trials involving the treatment of patients for hysterectomy due to dysfunctional bleeding, hysteroscopy-endometrial destruction or the installation of the LNG-IUD. After the 12 monthly observations, the majority of patients
were dissatisfied with the long-term outcome of hysteroscopy endometrial ablation in comparison with hysterectomy. However, shorter hospital stay and faster return to daily activities went in favor of hysteroscopy. Detailed statistical analysis nevertheless went in favor of hysterectomy.

Mirena was indirectly compared with hysterectomy, although this comparison is limited. However, it is interesting that a similar estimate was observed for the Mirena.

Numerous studies have been conducted to evaluate which surgical mode is optimal, of course, exclusively for benign indications. One of these respectable study and meta-analysis of Johnson and co-workers which included 27 studies and a total of 3 643 patients, all of which underwent detachment due to some benign indications such as: abdominal, vaginal, or laparoscopically (7). They analyzed the following parameters: intraoperative complications (lesions of the urethra, bladder, intestines, etc.), postoperative complications (hematoma, infection, difficulty with urination, etc.), and duration of surgery, hospital stay, recovery time and return to daily activities. According to analyzed results, faster return to normal daily activities and shorter hospitalizations were observed in vaginal and laparoscopic surgery in comparison with abdominal, but no difference between vaginal and laparoscopic approach. More lesions were observed in the urethra and urinary bladder in laparoscopic surgery, but no other lesions of visceral organs. Overall, the fastest recovery, short hospital stay, the smallest number of intraoperative and postoperative complications suggest the vaginal approach as the first method of choice, and if not possible then the laparoscopic method (7).

Detailed statistical analysis showed that the comparison of laparoscopic (LAVH laparoscopic-assisted vaginal hysterectomy and TLH-total laparoscopic hysterectomy) and abdominal hysterectomy speaks in favor of the laparoscopic approach, or that this modality is significantly better in terms of fewer complications and faster recovery compared to abdominal hysterectomy (p = 0.004).

Comparison of intraoperative lesions of the urethra and/or the bladder during LAVH and TLH does not have a statistically significant difference (7).

Almost the same results offered another meta-analysis by Nieboer and associates, which included 34 studies and 4 495 patients. All were subjected to hysterectomy (for benign indications) on one of three ways: vaginal, abdominal or laparoscopic. Vaginal hysterectomy in comparison with abdominal has the following advantages: shorter duration of hospitalization, fewer complications, faster recovery, while the advantages of laparoscopic compared to abdominal is: faster recovery, less intraoperative bleeding and in accordance with this slight decrease if haemoglobin, shorter hospitalization, are rare hematoma and infection of the wounds. Shortcomings of laparoscopic hysterectomy in comparison with abdominal are frequently the urethra and bladder injury and longer duration of surgery. The advantages of LAVH and TLH are less common and nonspecific febrile episodes of infection, shortens the surgical procedure. In conclusion, the authors suggest that the first method of choice should be a vaginal hysterectomy, and if it is not possible, the method of choice would be some of the laparoscopic methods (8). The authors of both meta-analysis have offered nearly identical conclusions and stressed that the surgical approach should certainly be discussed with the patient and jointly decide on the optimal approach.

3. OBJECTIVES AND DEFINITION OF LAPAROSCOPIC HYSTECTOMY

The aim of laparoscopic hysterectomy is to avoid abdominal wall incision, to reduce intraoperative bleeding, reduce hospital stay and faster recovery of patients. Laparoscopic hysterectomy is sometimes, but not always substitute for ab-

| Stage 0: diagnostic laparoscopy and vaginal hysterectomy. | Type II: Preparation and ligation of the uterine artery. | Neis und Brander (1993) | LH |
| Stage 1: laparoscopic adhesiolyis and/or excision of endometiotic lesions. | Type III: Preparation and ligation of parametrial tissue. |  |
| Stage 2: adnexectomy. | Type IV: Preparation and ligation of lig.rotundum. |  |
| Stage 3: laparoscopic excision of the urinary bladder. |  |
| Stage 4: ligation of uterine artery. |  |
| Stage 5: colpotomy and evacuation of the uterus. |  |


Table 1: Different classifications of laparoscopic hysterectomy.
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Abdominal hysterectomy, but it is not indicated in cases where it is possible to perform a vaginal hysterectomy.

Indications were symptomatic myomas, abnormal bleeding, adenomyosis, endometriosis, adnex masses formation, chronic pelvic inflammatory disease, atypical endometrial hyperplasia and corpus carcinoma. It is important however to keep the criticism and do not engage in surgical activities that will needlessly take hours, if the surgery can be considerably shorter, and therefore more tolerable for the patient.

There are various attempts to classify a hysterectomy at which it is used and laparoscopy, but none has been officially accepted. The table below shows that behind the name “Laparoscopic Hysterectomy” is hiding a large number of operations that differ in extent of laparoscopic surgery.

4. LA vHA LAPAROSCOPIC-ASSISTED VAGINAL HYSTERECTOMY

LAVH involves different variations of laparoscopic and vaginal operative segments.

It should be noted that art. uterine can be ligated by either laparoscopic or vaginal approach. According to the ACOG, the LAVH is indicated in all cases where the operator for number of reasons (e.g. the condition after the previous laparoscopy, endometriosis, pelvic inflammatory disease, etc.) to avoid abdominal hysterectomy, but is expected difficult vaginal approach (e.g., due to adhesions), so his approach will make surgery much easier.

Contraindications for this surgical approach are great miomatous uterus, uterine sarcoma and ovarian cancer.

According to previous studies LAVH carries a slightly higher risk of injury to the urethra and urinary bladder in comparison with the abdominal approach, and a longer duration of surgery, but less blood loss, faster recovery and fewer postoperative complications. Because of that studies in general prefer LAVH in the abdominal approach.

However, it should be noted that LAVH is not a substitute for the abdominal approach and that each approach has its surgical indications, and that the operator must maintain a critical attitude towards each operative technique.

5. TLH-TOTAL LAPAROSCOPIC HYSTERECTOMY

According to Henry Reich who in 1989 made the first total laparoscopic hysterectomy, surgery is divided into six steps: presentation of the urethra, mobilization of the uterus and the release of the urinary bladder, uterine ligation of the upper bound, ligation uterine blood vessels, cutting ties cervicovaginal and cervical culdotomy, stitching the vagina.

When performing the vaginal TLH stitches laparoscopic or vaginal approach.

It is performed when vaginal hysterectomy is not possible due to difficulties in the vaginal approach (e.g. very narrow vagina) or any other reason. Contraindication for TLH include: suspicion of uterine sarcoma, miomatous uterus, a systemic disease of a patient which is a contraindication for laparoscopic surgery and a longer insufficiently trained surgeon.

TLH offers many advantages in comparison with the abdominal approach, such as: minimal bleeding, shorter recovery, less suffering, pain, shorter hospitalization and quicker return to daily activities. The fact is that the incidence of complications, especially in the beginning of using technology, especially lesions of the urethra was very high. In this respect, it is necessary to acquire much experience in laparoscopic surgery before entering the TLH.

In centers where it is performed routinely, TLH has become an alternative to abdominal hysterectomy.
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6. LSH- LAPAROSCOPIC SUPRACERVICAL HystEctomy

Laparoscopic supraventricular hysterectomy can be offered to patients in whom hysterectomy was indicated, but ruled out cervical dysplasia, endometrial cancer, deep pelvic endometriosis (sacrouterine ligaments). Of course, to these patients should be further explained the necessity of regular cytological control.

Also, according to recent guidelines, patients with supra-cervical adenomyosis recommended are hysterectomy. Many patients expressed satisfaction with this technique and their sex life after surgery.

Classical supraventricular hysterectomy

Classic abdominal infrasfacial supraventricular hysterectomy is also one of the operative methods of choice (11).

7. CONCLUSION

Each of these techniques has its indications, advantages and complications.

It is important to maintain a critical review, use their knowledge and experience to evaluate the selection of the optimal surgical approach.

Each technique has its own “learning curve” which is short for some techniques, and for some longer, it should be appreciated, and in accordance with them build their individual operational strategies and in doing so not forget that the welfare of the patient is at the first place.

REFERENCES


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