

Complications of laparoscopic assisted hysterectomy

Bianca Mihaela Danciu¹, Lucian Pop^{1,2}, Madalina Piron^{1,2}, Nicolae Bacalbasa^{2,3},
Irina Balescu⁴, Ioan D. Suciu⁵

¹“Alessandrescu-Rusescu” National Institute of Mother and Child Care, Bucharest, Romania

²Department of Obstetrics and Gynecology, “Carol Davila” University of Medicine and Pharmacy, Bucharest, Romania

³Department of Visceral Surgery, Center of Excellence in Translational Medicine,
Fundeni Clinical Institute, Bucharest, Romania

⁴Department of Visceral Surgery, Ponderas Academic Hospital, Bucharest, Romania

⁵Floreasca Emergency Hospital – General Surgery Department, Bucharest, Romania

ABSTRACT

Hysterectomy remains the most common gynecological procedure for both benign and malignant causes. Throughout the years, various surgical methods have been studied with the purpose of avoiding immediate and late complications. Laparoscopic surgeries have gained momentum in all surgical specialties, and gynecology is no exception.

Keywords: laparoscopic, hysterectomy, complications

INTRODUCTION

Being the most common major gynaecologic surgery performed in non-pregnant women, hysterectomy can be done in four major approaches: abdominal, vaginal, laparoscopic or robotic. The rates of laparoscopic (12%) and vaginal (22%) are considerably lower than abdominal hysterectomy (66%) [1] even though many benefits of laparoscopic hysterectomy are well documented [2-6].

Compared to open procedures, laparoscopic hysterectomy is associated with less blood loss and postoperative pain, reduced mortality, lower chances of sepsis, venous thromboembolism and ileus, faster recovery and shorter hospitalization [2-6].

It was first introduced in 1989, as a minimally invasive technique to perform hysterectomies and since then it has been adopted by many surgeons as the preferred technique.

Compared to the vaginal technique, it usually takes longer and has the risk brought by abdominal incisions. Nevertheless it is the second most expensive technique after the robotic one.

MAJOR COMPLICATIONS

Complications can be due to medical disorders, anesthesia, surgical technique or postoperative peri-

od. Overall, it is a procedure with a low mortality, 0.12 to 0.34/1000 surgeries [7]. Major complications include visceral injury, hemorrhage, death, thromboembolic disease, stroke, myocardial infarction, organ failure.

If laparoscopic is compared to abdominal approach, conversion to laparotomy is included in the category of major complications, but when excluded no significant difference remains.

Mainly studies comparing complications of one procedure versus the other, are made in pairs, the control group being considered the one having an abdominal hysterectomy. The results of such comparative studies are shown in tables 1 and 2.

Infectious complications after hysterectomy are common, 10.5% for abdominal hysterectomy to 13.0% for vaginal hysterectomy and only 9.0% for laparoscopic hysterectomy [9]. Infectious complications include vaginal cuff cellulitis, wound infections, urinary tract infections, abscesses, infected hematomas, respiratory infections [9].

Another classification for hysterectomy complications was suggested by DeNardis in 2008 who divided them in perioperative (first week after surgery) or delayed (1 to 6 weeks after surgery) [10]. Perioperative complications include pulmonary embolism, fever, ileus, hemorrhage, colitis, while delayed complications include seroma, wound infec-

Corresponding author:

Dr. Lucian G Pop

E-mail: popluciangh@icloud.com

Article History:

Received: 18 April 2022

Accepted: 30 April 2022

TABLE 1. Complications of Hysterectomy from the eVALuate Trial [8]

	Abdominal Trial		Vaginal Trial	
	Abdominal Hysterectomy	Laparoscopic Hysterectomy	Vaginal Hysterectomy	Laparoscopic Hysterectomy
Conversion to laparotomy		3.9%	4.2%	2.7%
At least one complication	6.2%	7.2%	5.4%	6.7%
Major hemorrhage (requiring blood transfusion)	2.4%	4.6%	2.9%	5.1%
Bowel injury	1.0%	0.2%	0.0%	0.0%
Bladder injury	1.0%	2.1%	1.2%	0.9%
Ureter injury	0%	0.9%	0%	0.3%

TABLE 2. Incidence of postoperative complications after hysterectomy, depending on the surgical approach [11]

	Abdominal	Vaginal	Laparoscopic	Overall
Cardiac	17 (0.1%)	10 (0.1%)	2 (0.0%)	5 (0.0%)
Vascular	576 (7.7%)	78 (1.7%)	210 (1.4%)	864 (3.2%)
Respiratory	43 (0.6%)	8 (0.2%)	17 (0.1%)	68 (0.3%)
Gastrointestinal	127 (1.7%)	30 (0.7%)	69 (0.5%)	266 (0.8%)
Genitourinary	22 (0.3%)	14 (0.3%)	39 (0.3%)	75 (0.3%)
Infectious	439 (5.9%)	271 (6.0%)	693 (4.6%)	1403 (5.2%)
Reoperation	105 (1.4%)	71 (1.6%)	202 (1.3%)	378 (1.4%)
Readmission	283 (3.9%)	122 (2.9%)	455 (3.1%)	860 (3.3%)
Death	7 (0.1%)	1 (0.0%)	2 (0.0%)	10 (0.0%)

tions, hematoma, lymphocele, bowel injuries and vaginal cuff separation.

REFERENCES

1. Wu JM, Wechter ME, Geller EJ et al. Hysterectomy rates in the United States, 2003. *Obstet Gynecol.* 2007;110:1091–1095.
2. AAGL Advancing Minimally Invasive Gynecology Worldwide. AAGL position statement: route of hysterectomy to treat benign uterine disease. *J Minim Invasive Gynecol.* 2011;18:1–3.
3. American Congress of Obstetricians and Gynecologists. Choosing the route of hysterectomy for benign disease. ACOG Committee opinion no. 444. *Obstet Gynecol.* 2009;114:1156–8.
4. Nieboer TE, Hendriks JC, Bongers MY et al. Quality of life after laparoscopic and abdominal hysterectomy: a randomized controlled trial. *Obstet Gynecol.* 2012;119:85–91.
5. Nieboer TE, Johnson N, Lethaby A et al. Surgical approach to hysterectomy for benign gynecological disease. *Cochrane Database Syst Rev.* 2009;8:CD003677.
6. Wiser A, Holcroft CA, Tolandi T, Abenheim HA. Abdominal versus laparoscopic hysterectomies for benign diseases: evaluation of morbidity and mortality among 465,798 cases. *Gynecol Surg.* 2013;10:117–22.
7. Falcone T, Walters MD. Hysterectomy for benign disease. *Obstet Gynecol.* 2008; 111:753–767.
8. Garry R, Fountain J, Mason S et al. The evaluate study: two parallel randomised trials, one comparing laparoscopic with abdominal hysterectomy, the other comparing laparoscopic with vaginal hysterectomy. *BMJ.* 2004;328:129.
9. Clarke-Pearson DL, Geller EJ. Complications of hysterectomy. *Obstet Gynecol.* 2013 Mar;121(3):654-673.
10. DeNardis SA, Holloway RW, Bigsby GE 4th et al. Robotically assisted laparoscopic hysterectomy versus total abdominal hysterectomy and lymphadenectomy for endometrial cancer. *Gynecol Oncol.* 2008 Dec;111(3):412-7.
11. Louie M, Strassle PD, Moulder JK et al. Uterine weight and complications after abdominal, laparoscopic, and vaginal hysterectomy. *Am J Obstet Gynecol.* 2018 Nov;219(5):480.e1-480.e8.
12. Orhan A, Ozerkan K, Kasapoglu I et al. Laparoscopic hysterectomy trends in challenging cases (1995-2018). *J Gynecol Obstet Hum Reprod.* 2019 Dec;48(10):791-798.

MINOR COMPLICATIONS

Most often minor complications after laparoscopically assisted hysterectomy are represented by wound infection or by the apparition of punctiform areas of numbness which will disappear after a certain period of time. Meanwhile, in cases in which an uterine manipulator is placed, minimal vaginal lesions might be encountered which can be easily managed by placing intravaginal ovules. In the meantime, due to urinary bladder dissection and manipulation, transitory hematuria might be encountered.

CONCLUSION

Laparoscopic hysterectomy presents plenty advantages such as complete exploration of the abdominal cavity, short recovery period and better cosmetic result, but it is still not the gold standard due to its limitations and possible complications. Women with obesity, large uterus or previous abdominal surgery are no longer considered restricted from laparoscopic approach [12].

Nevertheless, it was observed that laparoscopic hysterectomy has lower chances of complications than abdominal technique. Only ureteral injury and vaginal cuff dehiscence were reported more frequently after laparoscopic hysterectomy.

Conflict of interest: none declared
Financial support: none declared