



Various hysterectomy approach for benign gynecological disease: a review

I Gde Sastra Winata^{1*}, I Gusti Ngurah Yudhi Pramana²

¹Oncology-Gynecology Division, Obstetrics and Gynecology Department, Sanglah General Hospital/University of Udayana, Denpasar, Bali;

²Obstetrics and Gynaecology Department, Sanglah General Hospital/University of Udayana, Denpasar, Bali.

*Correspondence:

I Gde Sastra Winata;
Oncology-Gynecology Division,
Obstetrics and Gynecology Department,
Sanglah General Hospital/University of
Udayana, Denpasar, Bali;
dr.sastrawinata@gmail.com

Received: 2025-04-15

Accepted: 2025-06-04

Published: 2025-06-16

ABSTRACT

Aim: This study is aimed to review various surgical approach of hysterectomy for benign gynecological disease.

Background: Hysterectomy is a surgical procedure to remove the uterus by a gynecologist. Hysterectomy usually used as the last resort in handling various cases of female reproductive organ disorders, especially for benign gynecological disorders.

Review results: There are two classifications of hysterectomy, both according to the surgical technique or method of operation and according to the organs that are removed during surgery. Based on the organ removed during surgery, hysterectomy can be divided into total hysterectomy, partial hysterectomy, radical hysterectomy, and bilateral hysterectomy and salpingo-oophorectomy. Hysterectomy according to the surgical technique can be divided into abdominal hysterectomy, vaginal hysterectomy, and laparoscopic hysterectomy.

Conclusions: Each type and technique of hysterectomy has advantages and disadvantages. Various considerations of indications and contraindications will also determine the type of hysterectomy to be performed.

Clinical Significance: Hysterectomy is a definitive treatment for various benign gynecological diseases. Appropriate selection of hysterectomy approach may affect patient's quality of life.

Keywords: Hysterectomy, benign gynecological disorders, partial hysterectomy, total hysterectomy, vaginal hysterectomy.

Cite This Article: Winata, I.G.S., Pramana, I.G.N.Y. 2025. Various hysterectomy approach for benign gynecological disease: a review. *Bali Obstetrics and Gynecology Journal* 1(1): 1-3

INTRODUCTION

The uterus is a robust, muscular organ situated in the lesser pelvis, positioned between the bladder and the rectum. The anterior and posterior walls, along with the upper portion of the uterus, are covered by peritoneum, whereas the lower portion is closely associated with the urinary bladder. To maintain its anatomical position, the uterus is supported by several ligaments, connective tissues, and the parametrium. The uterine wall comprises three layers: the perimetrium (the outermost layer), the myometrium (the middle layer composed of smooth muscle), and the endometrium (the innermost layer).¹

Hysterectomy is a surgical procedure involving the partial or complete removal of the uterus. It is considered a definitive treatment option, typically reserved as the last resort for managing various gynecologic conditions or pathologies of the reproductive organs. The removal of the uterus and, in some cases, adjacent structures has significant implications for the female reproductive system. It

results in the loss of reproductive capacity, cessation of menstruation, and may lead to hormonal alterations.²

Definition of Hysterectomy

The term hysterectomy is derived from two Latin words: "hyster," meaning womb/uterus, and "ectomy," meaning cutting. Therefore, hysterectomy is a surgical procedure performed to remove the uterus, typically conducted by obstetricians to treat various disorders of the female reproductive organs and functions.³

Epidemiology

According to a survey conducted by the Association of Obstetricians in 2019 in the United States, it was found that more than 600,000 women undergo hysterectomies annually.^{4,5}

Classification

Hysterectomy can be classified into four types based on the part of the uterus or organs removed during the procedure:

Partial Hysterectomy (Subtotal/Extraperitoneal)

In a partial hysterectomy, only the uterus is removed, while the cervix is preserved. The advantages of this procedure include shorter surgical duration and fewer postoperative complications, such as less bleeding and lower risk of surgical wound infections. Some studies suggest that preserving the cervix may improve sexual function compared to a total hysterectomy, though this remains controversial, as not all studies have found significant differences in sexual function between partial and total hysterectomy groups. The disadvantage of partial hysterectomy is the continued risk of cervical cancer, necessitating regular Pap smear screenings.⁶⁻⁸

Total Hysterectomy (Intraperitoneal)

In contrast to partial hysterectomy, a total hysterectomy involves the removal of the entire uterus, including the cervix. The advantage of this procedure is the removal of the cervix, reducing the risk of carcinoma and precancerous lesions

originating from the cervix. However, the disadvantages include a longer surgical duration, increased blood loss, prolonged hospitalization, and a higher risk of postoperative complications, such as fever, urinary retention, surgical wound infections, and vaginal hematomas.⁶⁻⁸

Bilateral Hysterectomy and Salpingo-Oophorectomy

A total hysterectomy may also involve the removal of additional reproductive organs. If both fallopian tubes are removed, the procedure is called salpingectomy. If both ovaries are removed, the procedure is termed oophorectomy. When both the uterus, cervix, fallopian tubes, and ovaries are removed, the procedure is called bilateral hysterectomy with salpingo-oophorectomy. The removal of the ovaries induces a menopausal state, even in young women.⁶

Radical Hysterectomy

A radical hysterectomy involves the removal of the upper portion of the vagina and several surrounding lymph nodes. This procedure is typically performed for certain types of cancer to potentially save the patient's life. It includes the removal of the upper vagina, surrounding tissues, and lymph nodes near the uterus.⁶

Surgical Techniques

Hysterectomy can also be classified according to the surgical approach:

Abdominal Hysterectomy

In an abdominal hysterectomy, the uterus is removed through an incision in the abdomen, either vertically or horizontally (Pfannenstiel incision). The advantages of this technique are the surgeon's ability to view the uterus and surrounding tissues freely, making it suitable for large fibroids or uterine cancer. However, this approach typically results in more pain, longer recovery times, and increased scar tissue formation.⁹

Vaginal Hysterectomy

A vaginal hysterectomy is performed through a small incision in the upper part of the vagina. The uterus (and cervix) are separated from surrounding tissue and blood vessels and removed through

the vaginal opening. This technique is commonly used for uterine prolapse. It offers advantages such as faster healing, less pain, and no visible scarring. However, a disadvantage is an increased risk of recurrence.^{6,9}

Laparoscopic Hysterectomy

Laparoscopic hysterectomy includes two techniques: laparoscopically assisted vaginal hysterectomy (LAVH) and laparoscopic supracervical hysterectomy (LSH). LAVH is similar to vaginal hysterectomy but uses a laparoscope inserted through a small incision in the abdomen to visualize the uterus and surrounding tissues. In LSH, the uterus is divided into small pieces and removed through the abdominal incision. Both techniques cause less pain, faster recovery, and minimal scarring. Laparoscopic hysterectomy is performed under general anesthesia, and the procedure duration ranges from 40 minutes to three hours. For total hysterectomy, the uterine tissue is removed through the vagina, followed by vaginal closure. The operation is typically performed using four small incisions, one in the navel and three in the lower abdomen.⁹

Medical Consideration on Performing Hysterectomy

The decision to perform a hysterectomy depends on various factors, including medical indications and contraindications. Indications for hysterectomy include uterine rupture, uncontrolled bleeding (e.g., in uterine atony, placental abruption), uterine infections, large fibroids, cervical cancer, and other serious reproductive conditions. Contraindications include existing pulmonary issues, infections, prior laparotomy, and other factors such as adhesions or abscesses that may complicate surgery.⁹

Complications associated with hysterectomy include hemorrhage (often severe), venous thrombosis (especially after radical hysterectomy), infection, and fistula formation, which involves abnormal connections between organs or between an organ and the external environment. The most serious complications of a radical hysterectomy are fistulas and ureteral strictures. Retroperitoneal space suction

drainage is often used to reduce the risk of infection.⁹

Minimally invasive approaches, such as vaginal or laparoscopic hysterectomy (including robot-assisted laparoscopy), are preferred whenever feasible. The vaginal approach is the most common minimally invasive technique, while laparoscopic hysterectomy is a preferred alternative when vaginal surgery is not possible. The choice of technique is influenced by factors such as uterine size and shape, pelvic adhesions, the extent of disease, the surgeon's experience, available hospital resources, and patient preferences.

CONCLUSION

Hysterectomy is one of the most frequently performed surgical procedures for the treatment of gynecological diseases. Clinicians must carefully consider various medical indications and contraindications, the availability of surgical facilities, and patient preferences when selecting the appropriate hysterectomy approach to maximize benefits and minimize risks based on the clinical situation.

CLINICAL SIGNIFICANCE

Hysterectomy is a definitive treatment for various benign gynecological diseases. Appropriate selection of hysterectomy approach may affect patient's quality of life.

ETHICAL CONSIDERATIONS

Not Applicable

DECLARATION OF CONFLICTING INTERESTS

The author(s) declared no potential conflicts of interest concerning this article's research, authorship, and/or publication.

FUNDING

The author(s) received no financial support for this article's research, authorship, and/or publication.

AUTHOR CONTRIBUTIONS

All authors contributed to data gathering, analysis, drafting, and revising and

approving the article regarding this research to be published.

REFERENCES

1. Moore KL, Dalley AF, Agur AMR. 2014. Clinically Oriented Anatomy. 7th ed. Philadelphia: Lippincott Williams & Wilkins
2. Smith K, & Caceres A. Vaginal cuff closure in minimally invasive hysterectomy: a review of training, techniques, and materials. *Cureus*, 2017; **9**(10).
3. Touhami O, Bouzid A, Marzouk SB, Kehila M, Channoufi MB, & El Magherbi H. Hemorrhage after emergency peripartum hysterectomy: a review. *Obstetrical & gynecological survey* 2018; **73**(2), 110-115.
4. Jeppson PC, Balgobin S, Rahn DD, Matteson KA, Dieter AA, Ellington DR, Aschkenazi SO, Grimes C, Mamik MM, Balk EM, Murphy M. Comparison of vaginal hysterectomy techniques and interventions for benign indications: a systematic review. *Obstetrics & Gynecology* 2017; **129**(5): 877-886.
5. Liu Z, Wang Y, Yan J, Li J, Liu X, Zhang L, & Cheng L. Uterine artery embolization versus hysterectomy in the treatment of refractory postpartum hemorrhage: a systematic review and meta-analysis. *The Journal of Maternal-Fetal & Neonatal Medicine* 2020; **33**(4), 693-705.
6. Darelus, A, Lycke, M, Kindblom, JM, Kristjansdottir B, Sundfeldt K, & Strandell A. Efficacy of salpingectomy at hysterectomy to reduce the risk of epithelial ovarian cancer: a systematic review. *BJOG: An International Journal of Obstetrics & Gynaecology* 2017; **124**(6), 880-889.
7. Lonnee-Hoffmann R & Pinas I. Effects of Hysterectomy on Sexual Function. *Curr Sex Health Rep* 2014, **6**: 244-251.
8. Alexio GF, Fonseca MCM, Bortoloini MAT, Brito LGO, & Castro RA. Total Versus Tubtotal Hysterectomy: Systematic Review and Meta-analysis of Intraoperative and Postoperative Short-term Events. *Clinical Therapeutics* 2019; **41**(4): 768-789.
9. Naveiro-Fuentes M, Rodríguez-Oliver A, Fernández-Parra J, González-Paredes A, Aguilar-Romero T, & Mozas-Moreno J. Effect of surgeon's experience on complications from laparoscopic hysterectomy. *Journal of gynecology obstetrics and human reproduction* 2018, **47**(2): 63-67.



This work is licensed under a Creative Commons Attribution