



Comparative Study of Vaginal Hysterectomy and Total Abdominal Hysterectomy in Non-descent Uterus

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Abstract:

AIM

To compare outcome of the study of the Vaginal Hysterectomy (VH) in non-descent uterus and that of total Abdominal Hysterectomy (AH) with respect to demographic profile like age group & parity & presenting symptoms, indications, diagnosis, mode of delivery, operative time, operative complications, blood transfusion need, postoperative complications, ambulation, type anaesthesia & complications of anaesthesia and post operative hospital stay.

MATERIALS & METHODS

The study was carried out at Dhiraj Hospital at Vadodara, Gujarat. Total of 100 cases admitted to the Gynaecology unit requiring hysterectomy for benign diseases were randomly selected out of which 50 cases underwent vaginal hysterectomy for non-descent uterus and 50 cases underwent abdominal hysterectomy for the same indications during the study period between January 2023 to February 2024.

RESULT

- Majority of the patients operated for hysterectomy belonged to 41-50 years of age. Mean age of abdominal hysterectomy and vaginal hysterectomy are 43.2 and 45.6 respectively. Majority of the patients came to the hospital with complain of excessive menses.
- Most of the patients who underwent hysterectomy are multiparous and mean parity in the AH group is 3.05 and VH Group is 3.13
- The most common indication in both the group is DUB (43%) of the cases, followed by Adenomyosis (31%), Fibroid Uterus (19%) and PID (7%).
- 82% of the patients are delivered vaginally and 13% of these patients has previous caesarean delivery and operated without any major complication. Selected cases of previous CS were successfully operated vaginally without any major complication.
- Anaemia (30%) is the most common medical condition associated in this study. As patients coming for hysterectomy are of perimenopausal age group and usually present with the complain of menorrhagia therefore they develop anaemia.
- Mean duration of surgery in vaginal group (62 minute) is lower than the abdominal group (70 minutes). Patients of vaginal group ambulated earlier than the abdominal group.
- Total 20% of cases were given blood transfusion pre, intra, or post operatively to reduce intraoperative and post operative morbidity and mortality in required cases.
- Overall, 97% of the patients operated under spinal anaesthesia and 8% of these patients developed spinal headache.
- Rate of intraoperative complication is high in abdominal group as compared to vaginal



group. Most common indication in the abdominal group is adhesions. Intraoperative bladder injury is seen in 2 cases of abdominal group and 1 case of vaginal group which was managed successfully.

- Most common post operative complication is fever in 4.5% of cases. Rate of post operative complication is less in vaginal group as compared to abdominal group. There were 3 cases of wound infection which required re-suturing.
- Most of the patients discharged between 4-6 days post operatively. Mean postoperative stay in the vaginal group is 4.1 day and abdominal group is 5.1 days.
- There was no case of mortality in this study showing that hysterectomy was a safe procedure nowadays with minimal complications.

CONCLUSION

Vaginal hysterectomy is a safe, least invasive & most economical route, with lesser complications and should be chosen as the preferred method of hysterectomy, over total abdominal hysterectomy, whenever feasible.

Keywords: non-descent uterus, vaginal hysterectomy, total abdominal hysterectomy, benign tumours, complications.

Introduction

Hysterectomy is the surgical removal of the uterus. Hysterectomy is the most commonly performed elective major gynaecological surgery.^[1] Women believe that the uterus and menstruation is the core of their femininity and sexual life.^[2] The word 'hysterectomy' is derived from the Greek word '*hystera*' meaning womb and '*ectomia*' meaning excision.

The rate of hysterectomy has varied between 6.1 and 8.6 /1000 women of all ages.^[3] A study conducted in a northern state of India (Haryana) states that incidence of hysterectomy was 7% among married women above 15 years of age.^[4] Another study from a western state (Gujarat) pointed out that 7-8% of rural women and 5% of urban women had already undergone hysterectomy at an average age of 37 years.^[5]

Hysterectomies are performed vaginally, abdominally, or with laparoscopic or robotic assistance. When choosing the route and method of hysterectomy, the physician should take into consideration how the procedure may be performed most safely and cost-effectively to fulfil the medical needs of the patient. Most literature supports the opinion that, when feasible, vaginal hysterectomy is the safest and most cost-effective route by which to remove the uterus.^[6] Approach also depends on surgeon's preference, indication for surgery, nature of disease, and patient characteristics. The gynaecological surgeon should not only technically adapt these various procedures but also use history, physical examination, and discussion with the patient to match the surgical procedure to the patient to obtain the most satisfactory outcome.^[7]

Famous French surgeon, Doyen insisted that no one could call himself a gynaecologist until he performed vaginal hysterectomy.^[8] Familiarity with vaginal surgery is a distinguishing mark between gynaecologists and general surgeons.^[9]

Materials & Methods

Total Cases considered for this study were divided into two group depending on route of hysterectomy performed: (1) Group -1: n1-AH = 100 cases, & (2) Group-2: n2-VH = 100 cases, Thus, Total = 200 cases.

For all these case, Ultrasonography and Pap smear were done in all case and D&C was done in required cases to rule out other pathology and malignancy. Also, the cases were investigated thoroughly for their cardio-respiratory status and fitness for surgery and other medical condition. Thus, cases with prolapse uterus and sling operations done before for prolapse uterus were excluded. Even, Laparoscopic assisted vaginal hysterectomy cases were excluded. Cases with Adnexal pathology > 5 cm & Gynaecological malignant disorder cases were also excluded.



Every patient was completely evaluated by an anaesthesiologist before deciding the type of anaesthesia. All patients were operated under spinal, or epidural or general anaesthesia as decided by the anaesthetist in individual cases.

All cases were observed vigilantly pre-operatively, intra operatively and post operatively for any complications. Adequate postoperative care was given.

Operating time for vaginal hysterectomy was calculated from incision at cervicovaginal junction to the completion of closure of vault. Operating time for abdominal hysterectomy was calculated from incision on the abdomen to closure of skin incision.

Intra operative complications like adhesions, injury to bladder and bowel and haemorrhage were noted. Foley's catheterization of bladder and placement of vaginal pack were done according to the surgeon's choice.

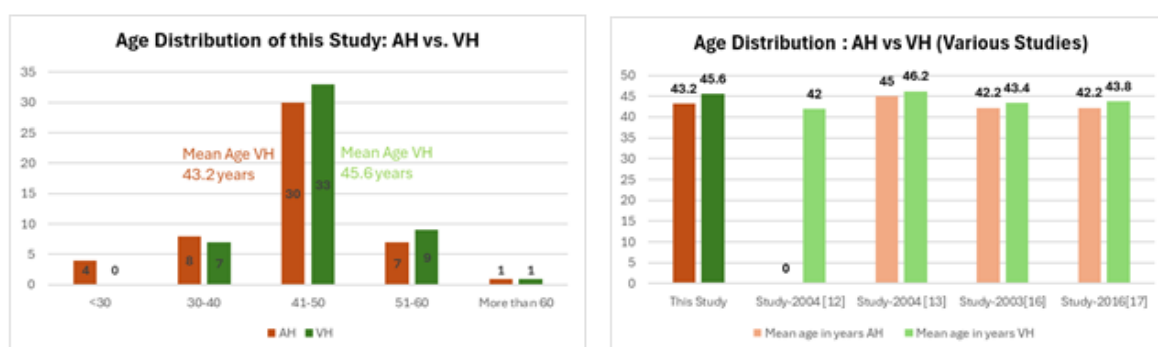
Analgesics used during the immediate post operative period to make the patients pain free were noted. The time taken for the patient to ambulate voluntarily was noted. All patients were advised to ambulate early.

Post operatively patients were noted for complications like fever, pain, bladder and bowel disturbances, bleeding and the abdomen wound was inspected in those patients who had undergone abdominal hysterectomy. Postoperative hospital stay was recorded in whole days.

Results

Age Distribution:

The mean age of the patients who underwent vaginal hysterectomy was 45.6 years, and abdominal hysterectomy was 43.2 years. Mean age for AH and VH in this study are comparable with different studies.



Parity Distribution:

Majority of the patients are multiparous and mean parity in both the group is 3.05 for AH & 3.13 for VH. There is no nulliparous patient in the VH group and on the other side, one in the AH group. Nulliparity is not a contraindication for VH. According to one study VH was successfully performed in 96.2% of the nulliparous patients.^[14]



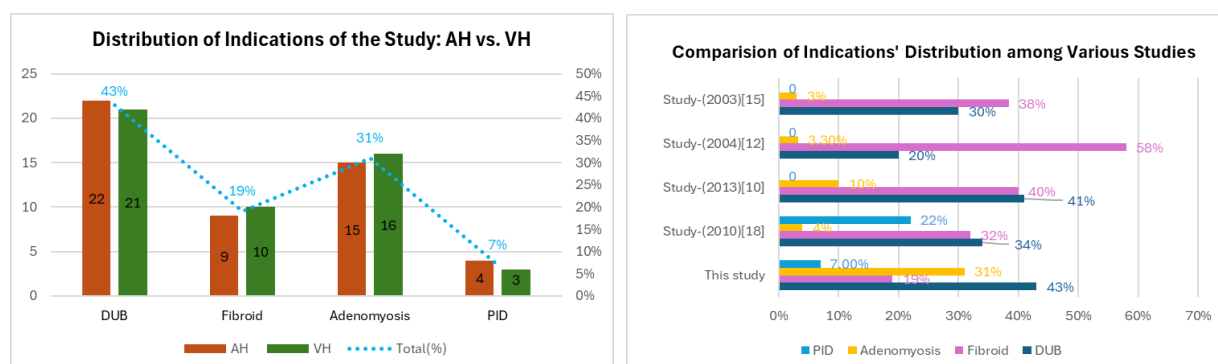


Indications & Diagnosis:

Most common indication for hysterectomy was AUB, which is common in peri-menopausal women. Repeated vaginal deliveries and age have been implicated as risk factors for developing pelvic floor abnormalities. The usual contraindications for vaginal hysterectomy are absence of significant uterovaginal prolapse, presence of uterine enlargement, adhesions, and the need for oophorectomy. If we had included the cases of prolapsed uterus then the mean age for VH may be more than AH, in our study.

The exhibit below shows that dysfunctional uterine bleeding is the most common indication of surgery in both the group. In most of the possible cases of DUB medical management and D&C was performed as first line of management and after failure of that hysterectomy was performed. In one mentally retarded patient AH was performed for complain of menorrhagia and request from legal guardian. It was included in DUB as no definite aetiology traced.

Adenomyosis uterus is the 2nd most common indication of abdominal hysterectomy. In patients with somewhat larger size of fibroid AH was performed as it is difficult in VH to manage distorted anatomy and large sized uterus.

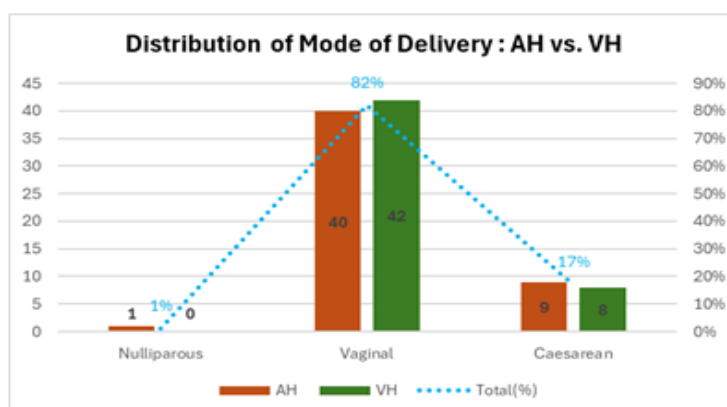


Majority of patients were of the peri-menopausal age group and menstrual irregularities were common in them which leads to the common presenting complaint of heavy menses.

While comparing the findings of various studies in terms of indication for hysterectomy, in this study, DUB is the most common indication of the surgery, whereas in the last three studies fibroid uterus is the most common indication. As this study was conducted in a hospital attached with academic institute, the cases of DUB were comparatively more in this study and abdominal hysterectomy was more commonly performed in such institutes for teaching purpose.

Mode of Delivery:

There was one case of a nulliparous patient who underwent abdominal hysterectomy and six cases with previous caesarean delivery underwent vaginal hysterectomy without any major complication.



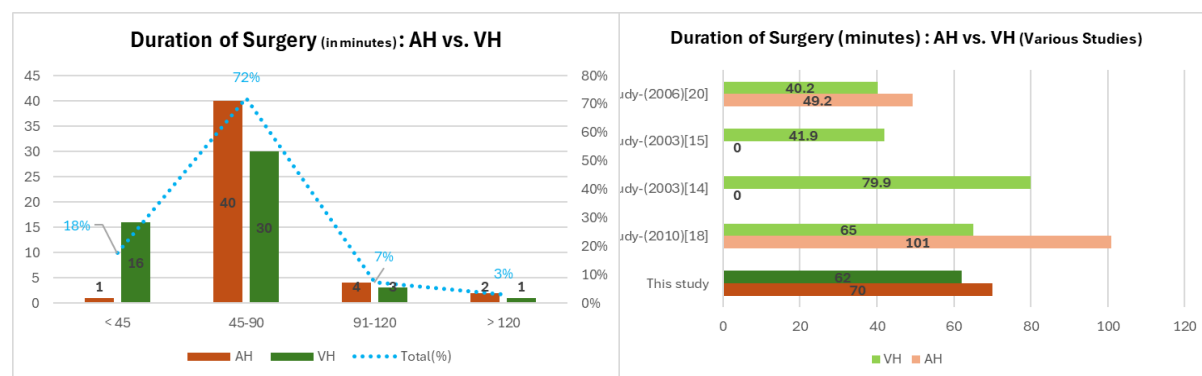


Doucette and co-workers in their study on 250 patients challenged the common contra-indications to vaginal hysterectomy including nulliparous patients, h/o previous CS or laparotomy and concluded that the above-mentioned factors are rarely contra-indications. However, in our study, history of previous surgery affected the selection of route for hysterectomy.

With adequate vaginal access and good uterine mobility, vaginal hysterectomy can be easily performed. The uterosacral and cardinal ligaments, situated in close proximity to the vaginal vault once clamped and cut produce first degree descent. Multiparity, lax tissues following multiple deliveries and decreased tissue tensile strength provide comfort to vaginal surgeon even in the presence of uterine enlargement. The other important reason for the lower proportion of hysterectomies performed vaginally is the presence of uterine enlargement with leiomyomas or adenomyosis. However, bulky uterus can be dealt with techniques like bisection, releasing incisions on uterus, myomectomy or debulking.

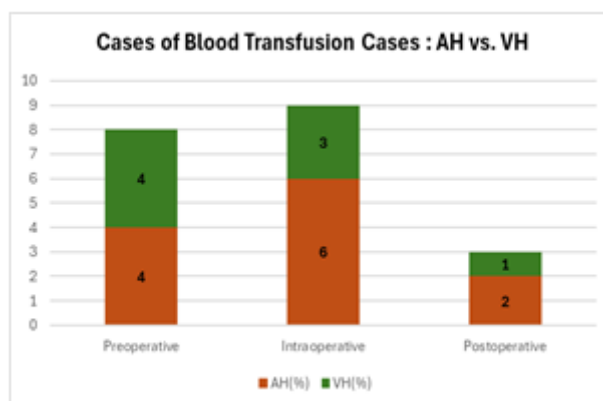
Duration of Surgery:

The average duration of vaginal hysterectomy is 62 minutes and abdominal hysterectomy is 70 minutes. The comparison with different study is also shown in the following exhibit. This added advantage of VH in terms of less intra-operative duration as compared to AH would suffice to decreased post-operative morbidity and hospital stay.



Blood Transfusion:

Total 20 (only 18%) cases out of 100 cases of hysterectomy were offered blood transfusion in this study. As there is a significant association between anaemia and hysterectomy, nearly 70% of the patients out of the total 20 blood transfusion cases, were given blood to all preoperatively & to some intra-operative to reduce the intra-operative and post operative complication. Net Intraoperative cases were only 15% and balance cases were given at post operative stage.

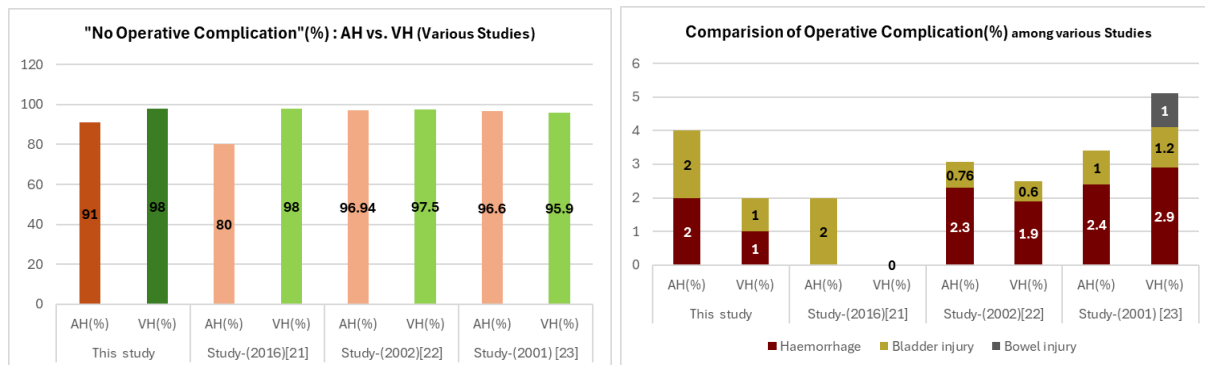


Operative Complications:

In this study 5% of the cases had significant restricted mobility on bimanual palpation and hence abdominal



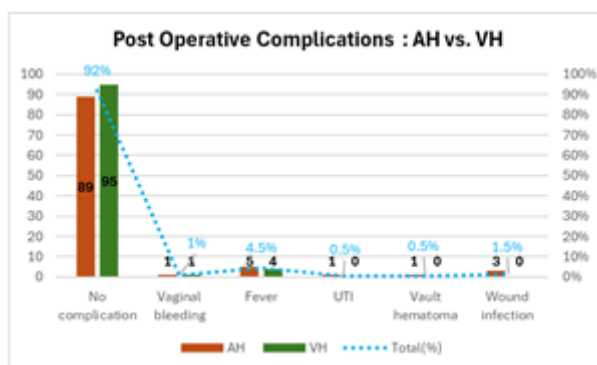
hysterectomy was offered to them and subsequent adhesiolysis performed. Total 3 cases were complicated by bladder injury either by accidental opening of bladder or during adhesiolysis. There were no cases of bowel and ureteric injury in both the groups. Overall, 94% of the surgeries were performed without any intra-operative complications.



The incidence of haemorrhage in this study was comparable to Maresh et al study. The percentage of bladder injury was slightly more in this study. Although the incidence of bowel and ureteric injury was comparable in all studies. As the study conducted at tertiary care hospital, many surgeries performed by resident doctors under guidance of professors still majority of the cases were operated without any intra-operative complications.

Post Operative Complications:

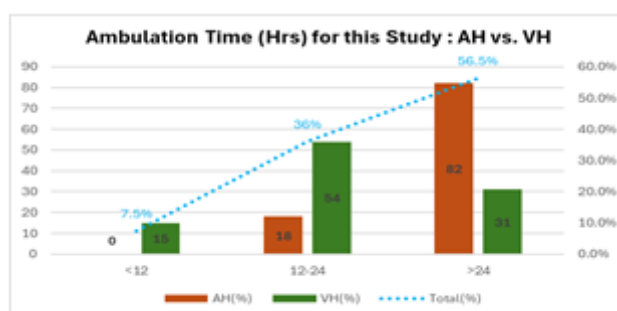
In this study post operative complications like fever, UTI or wound infection are more in the abdominal group as compared to vaginal group. There were 3 cases of wound infection in abdominal group which were managed with re-suturing after treatment with susceptible antibiotics. There was one case of vault hematoma in the abdominal group, which was managed conservatively.



Overall, most common post operative complication is fever followed by urinary tract infection which is comparable to Study-(2004).^[18] Incidence of haemorrhage in this study is lower as compared to the Evaluate trial. The rate of vault hematoma was comparable with the Study-(2001).^[23] There was no incidence of mortality due to adequate intra-operative and postoperative care.

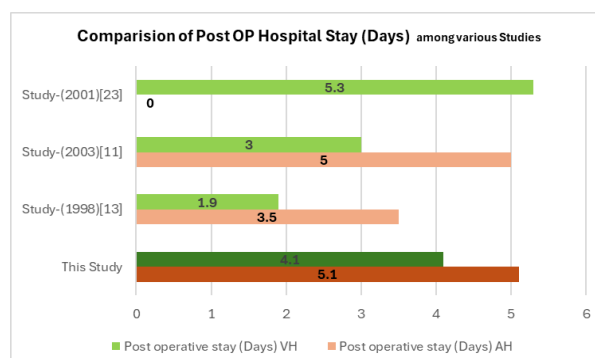
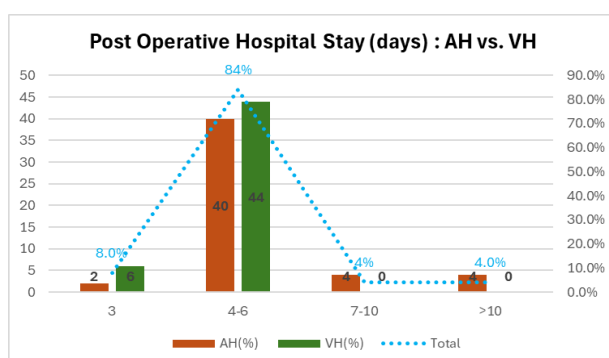
Ambulation:

Majority of the patients in the vaginal group ambulated within 24 hours while patients in the abdominal group ambulated in >24 hrs, which could probably be due to the discomfort/pain of the abdominal wound.



Post Operative Hospital Stay:

Mean post operative stay in the vaginal group was 4.1 days and in the abdominal group, was 5.1 days. Overall post operative hospital stay is 4.6 days.

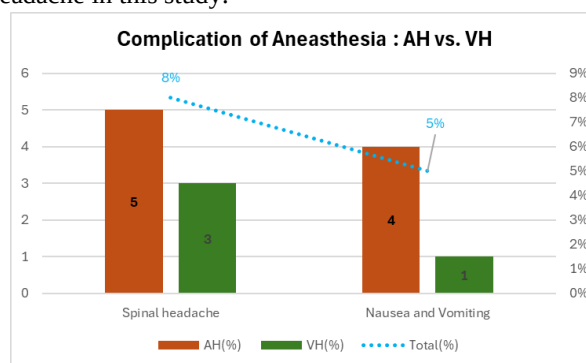
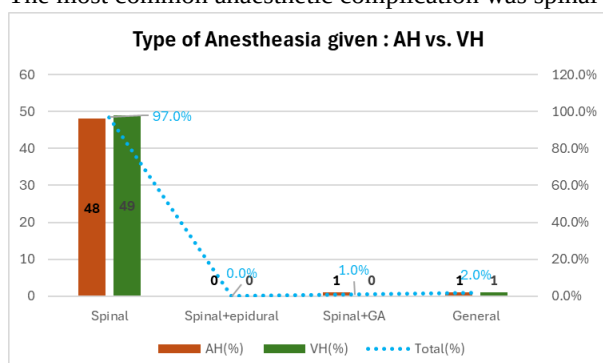


This study shows that in patients without genital tract prolapse, vaginal hysterectomy is associated with significantly shorter hospitalization than abdominal hysterectomy. It is not surprising that patients reported less discomfort and faster recovery after vaginal hysterectomy in the immediate post-operative period.

Type of Anaesthesia:

97% of the surgery operated under spinal anaesthesia with less anaesthesia related complication. Epidural anaesthesia was given more in the abdominal group, with all cases, in which adhesions were suspected.

The most common anaesthetic complication was spinal headache in this study.



Conclusion

The present study was undertaken to provide objective evidence to assist Gynaecological Surgeons in their selection of the most appropriate method of hysterectomy and to provide data to permit patients to make an informed decision about their preferred type of hysterectomy.



With adequate vaginal access, good uterine mobility and technical skill, vaginal hysterectomy can safely be performed on a non-prolapsed uterus, with an additional advantage of shorter duration of surgery, intraoperative complications, post-operative morbidity and shorter hospital stay.

Although we did not include economical parameters, there should be a potential economic advantage with VH because of shorter duration of surgery, reusable instruments, and less need for high tech equipment. Classic vaginal surgery for hysterectomy should not be regarded as an exquisite but a basic gynaecological skill. Newer techniques for hysterectomy like total laparoscopic hysterectomy and robot assisted hysterectomy require more skill and monetary resources compared to vaginal and abdominal hysterectomy.

Thus, all the patients with non-descent uterus with benign condition should be subjected to vaginal hysterectomy unless contraindicated as it is feasible, safe and provides more comfort to the patient.

Bibliography

1. Robert S Kavoc. Guidelines to determine the route of hysterectomy. *Obstetrics and Gynecology* 1995;85(1):18-22.
2. Michael P Diamond, James F Daniel, Hysterectomy-An Hysterectomy Introduction. 1998:1-5.
3. Thomas G Stovall. Hysterectomy. Berek & Novak's *Gynecology*, 14th ed, Lippincott Williams & Wilkins. 2007:805.
4. Singh and A. K. Arora, "Why hysterectomy rate are lower in India?" *Indian Journal of Community Medicine*, vol. 33, no. 3, pp. 196–197, 2008.
5. S. Desai, T. Sinha, and A. Mahal, "Prevalence of hysterectomy among rural and urban women with and without health insurance in Gujarat, India," *Reproductive Health Matters*, vol. 19, no. 37, pp. 42–51, 2011.
6. Nieboer TE, Johnson N, Lethaby A, Tavender E, Curr E, Garry R, et al. Surgical approach to hysterectomy for benign gynecological disease. *Cochrane Database of Systematic Reviews* 2009, Issue 3. Art. No.: CD003677. DOI: 10.1002/ 14651858.CD003677.pub4.
7. Howard.W.Jones. Hysterectomy. Te Linde's *Operative Gynecology*. 9th ed. Lippincott Williams & Wilkins. 2003:800.
8. Doyen Green, Armytage VB, Vaginal hysterectomy –New technique: Follow up of 500 consecutive operations for hemorrhage. *J. Obstetrics and Gynecology . Br. Empire*, 1939;46:848-856.
9. Richard T, Weaver MB., Vaginal hysterectomy *Am J Obstetrics and Gynecology*, 1951,62(5):1117
10. Gayak K et al. *Int J Reprod Contracept Obstetrics Gynecology*. 2015 Apr;4(2):419-423
11. Miskry T, Magos A. Randomized, prospective, double-blind comparison of abdominal and vaginal hysterectomy in women without uterovaginal prolapse. *Acta Obstetrics Gynecology Scand* 2003;82:351–8
12. Dewan R, Agarwal S, Manisha, Minocha B, Sen SK. Non-Descent vaginal hysterectomy- an experience. *J Obstetrics Gynaecology India*. 2004;54:376-8.
13. Isik-Akbay EF, Harmanli OH, Panganamamula UR, et al. Hysterectomy in obese women: a comparison of abdominal and vaginal routes. *Obstetrics Gynecology* 2004; 104:710.
14. Aubert Agostini., Florence Bretelle., Ludonic Cravello., Anne Sophie., Maisonneuve., Bemad Blanc., Vaginal hysterectomy in nulliparous women without prolapse: a prospective comparative study *Br. J. Obstetrics Gynecology* 2003; 110:515-518.
15. Pradeep Garg., Neena Maihotra., Deepika Deka., Vaginal approach of hysterectomy in benign conditions of the uterus: At rural health setting. *Obstetrics and Gynecology* 2003; 8 (9): 174-177.
16. Susan M Taylor, Andrey A, Adam Magos, Romero. AH for the enlarged myomatous uterus compared with VH with morcellation. *Am J Obstetrics Gynecology* 2003;189:1579-83.
17. A Comparison Between Non-Descent Vaginal Hysterectomy and Total Abdominal Hysterectomy. Dhivya Balakrishnan and Gharphalia Dibyajyoti
18. S Bharatnur. Comparative Study of Abdominal Versus Vaginal Hysterectomy In Non- Descent Cases. *The Internet Journal of Gynecology and Obstetrics*. 2010 Volume 15 Number 2
19. Mc Cracken G, Hunter D, Morgan D, Price JH. Comparison of laparoscopic – assisted vaginal hysterectomy, total abdominal hysterectomy and vaginal hysterectomy. *Ulster Med J*. 2006;75(1):54–58. [PMC free article] [PubMed]
20. Singh Abha, Bansal Shweta. VH for more prolapsed uterus. *Obstetrics Gynaecology md*. 2006; 56(2) 152055



21. Chavhan RP et al. *Int J Sci Rep.* 2016 Mar;2(3):48-52. Comparative study between vaginal and abdominal hysterectomy in non-descent cases
22. Maresh MJ, Metcalfe MA, McPherson K, et al. The VALUE national hysterectomy study: description of the patients and their surgery. *BJOG* 2002; 109:302.
23. Emile Darai, David Soriane, Kimata, C Laplace, F Lecure. VH for enlarged uteri, with or without laparoscopic assistance: Randomized study *Obstetrics and Gynecology* 2001;97:712-716