

A Comparison of Intraoperative and Postoperative Morbidity in Women Undergoing a Nondescent Vaginal Hysterectomy by Debulking Procedures vs the Conventional Method

Ruchika Garg¹, Garima Goel², Saroj Singh³

ABSTRACT

Introduction: Hysterectomy of an undescended uterus via the vaginal route (i.e., nondescent vaginal hysterectomy) has promising advantages over hysterectomy done via the abdominal route because of its lesser intraoperative and postoperative morbidity, better outcome, and patient acceptance. Performing a nondescent vaginal hysterectomy via the conventional method has certain limitations, as in the cases of uterine enlargement beyond 12 weeks, where debulking procedures are being used to reduce the bulk of the uterus to facilitate the vaginal delivery of the uterus.

Materials and methods: This study was conducted in the Department of Obstetrics and Gynaecology, Sarojini Naidu Medical College, Agra from July 2017 to July 2018. An estimated 100 women underwent a hysterectomy via the debulking procedure (which were designated as the study group), and another set of 100 women underwent a nondescent vaginal hysterectomy via the conventional method (which were designated as the control group). Informed consent was obtained from all the participants. Both groups were evaluated for intraoperative time required, intraoperative blood loss, incidence of bladder and rectal injuries, postoperative sepsis, postoperative duration of catheterization and mobilization, duration of postoperative intravenous fluid requirement and hospital stay, and overall morbidity.

Results: It was found that overall morbidity is less in cases of NDVH done by using debulking procedures than via conventional methods. The debulking procedure may appear to be more mutilating, but, by virtue of conserving operating time and avoidance of an undue pull on the suspensory ligaments, a better postoperative recovery, lesser morbidity, and better overall acceptance of the procedure was achieved.

Conclusion: It is therefore recommended that when the NDVH becomes difficult in delivering the uterus in masse, there should be no hesitation in adopting a particular debulking procedure as the situation may demand.

Keywords: Intraoperative blood loss, Nondescent vaginal hysterectomy, Postoperative morbidity.

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INTRODUCTION

In the scenario of hysterectomy of an undescended uterus via the vaginal route, the nondescent vaginal hysterectomy concept has gained a huge momentum recently because of its lesser intraoperative and postoperative morbidity, better outcome, and better patient acceptance. The overall morbidity and mortality is lower when compared to the abdominal hysterectomy, as it has additional advantages of no abdominal wound, no disturbance to the intestine, and no general peritoneal insult. Thus, it is significantly useful in operative management of a undescended uterus such as functional uterine bleeding, leiomyoma, adenomyosis, and dysplastic uterus. Performing NDVH via the conventional method has certain limitations: it can be done in multiparous uteri of a normal size but quite difficult in cases including uterine enlargement beyond 12 weeks in addition to hypertrophic elongation of the cervix (which causes a highed up anterior pouch) and in cases with endometriotic adhesions, etc. In these cases, debulking procedures are being used to reduce the bulk of uterus to facilitate the vaginal delivery of the uterus. A debulking procedure is indicated when, during the course of procedure, after the Mackenrodt's and uterosacral ligament complex has been ligated and both anterior and posterior pouches have been opened, it becomes apparent that the traction applied on the cervix fails to move the uterus any further in downward direction. These procedures include a bisection of the uterus, morcellation, circumferential incision CIMR, spiral incision, and traction for uniform uterine enlargement as in adenomyosis, DUB, and chronic PID with parametritis. For irregular uterine enlargements such as fibroids

¹⁻³Department Obstetrics and Gynaecology, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India

Corresponding Author: Ruchika Garg, Department Obstetrics and Gynaecology, Sarojini Naidu Medical College, Agra, Uttar Pradesh, India, Phone: +91 9720004485, e-mail: ruchikagargagra@gmail.com

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and cervical hypertrophy, procedures available are wedge excision, myomectomy—internal (tunneling), external, and cervical wedge. It is only natural to believe that these procedures would increase the time of surgery, prolong anesthesia, increase intraoperative blood loss, and increase the incidence of bladder and rectal injuries and postoperative sepsis. The present study is done to compare intraoperative and postoperative morbidity in patients undergoing a nondescent vaginal hysterectomy via debulking procedures vs conventional methods.

AIMS AND OBJECTIVES

To study and compare intraoperative and postoperative morbidity in women undergoing a nondescent vagina hysterectomy by a debulking procedure vs the conventional method.

MATERIALS AND METHODS

The study was conducted at the Department of Obstetrics and Gynaecology, Sarojini Naidu Medical College, Agra from July 2017 to July 2018.

Group I—multiparous women with an enlarged uterus (more than 12 weeks size) undergoing NDVH by the conventional method will form the control group.

Group II—multiparous women with an enlarged uterus (more than 12 weeks size) undergoing NDVH by the debulking procedure will form the study group.

Methods

The duration of surgery, intraoperative blood loss, the incidence of bladder and rectal injuries, postoperative mobilization and duration of postoperative intravenous fluid requirement, and duration of hospital stay will be evaluated in both the cases and control.

General Principles and Procedure of Debulking

After uterosacrals and Mackenrod's ligament have been ligated and uterine vessels (ascending and descending cervical vessels) have been ligated, anterior and posterior pouches are opened and a continued traction is given on the cervix to bring uterus closer to the uterus.

The principle of debulking is the conversion of transverse bulk of the uterus into a longitudinal cylinder. The cervix is amputated at the highest accessible level.

The lowest accessible portion of the broad ligament is clamped cut and ligated, taking care to make certain that both anterior and posterior leaves of the broad ligament peritoneum are included within the grasp of the hemostat on either side.

Procedures

- Bisection of the uterus—a longitudinal midline incision is made on the long axis of the uterus extending from uterus to the cervix; thus, the transverse dimensions of the uterus have been effectively reduced to half and the clamping expedited.
- Circumferential incision (CIMR)—an incision for CIMR purposes should be made parallel to the axis of the uterine cavity and parallel with the serosal surface of the uterus. It frees the uterus and brings the cervix down and result in considerable additional descent of the uterus.
- Wedge resection—this procedure consists of excising a wedge from the most accessible tissue; the apex of the wedge is taken at highest level the surgeon can reach with a scalpel.
- Spiral incision (lash technique)—a continuous spiral and downward incision is made starting from the highest accessible point of the anterior uterine surface down to the cervix.
- Morcellation—it consists of excavating the uterine tissue from inside in particular directions where the uterine fibroid may be pushing against the pelvic walls laterally or antero-laterally or in the anteroposterior direction. Moderate chunks of uterine musculature are removed, resulting in diminished dimensions of the uterus.
- Myomectomy
 - Internal—it consists of burrowing the way through and removal of as many fibroid from the cavity side, without accessing the serosal surface.
 - External—it is a direct myomectomy and entails pulling the uterus down till the lowest part of the subserous fibroid

capsule is just visible. An incision is made on this capsule and the fibroid is enucleated.

- Cervical myomectomy/cervical wedge—cervical fibroids or cervical hypertrophy can be effectively reduced in size by removing a wedge from both the anterior and posterior cervical lips.

DISCUSSION

Removing a normal-sized uterus vaginally in uncomplicated cases is a simple and safe procedure requiring no elaborate setup and yields a promising postoperative outcome. Large-sized uteri can be removed in whole up to 10–12 weeks via some form of a debulking procedure, also referred to as a reduction technique. Reduction techniques have enabled us to remove many uteri that ordinarily would fall prey to a laparotomy.

Vaginal hysterectomy was performed in 1813 by Langenback in Germany and in 1829 by John Collins Warren in Boston. In 1894, surgeons from France were successful in designing clamp methods for securing the ligaments and vascular pedicles, and devised morcellation and hemidissection techniques and even proposed the vaginal approach for pelvic inflammatory disease.¹ Intramyometrial coring was introduced by Lash² of Chicago in 1941, who advocated the method as a means of reducing uterine size without entering the uterine cavity in cases of pyometra and with cancers of the isthmus and corpus. Chauveaud and Fernandez³ did a retrospective study in a university hospital analyzing 148 total hysterectomies in women without vaginal deliveries performed from 1991 to 2000 and found that the mean operation time was 87 minutes in patients undergoing a hysterectomy via the abdominal route. Alwani et al. and Balakrishnan^{4,5} compared the efficacy of vaginal hysterectomy (VH) and abdominal hysterectomy (AH) of undescended uterus and found that NDVH via the debulking procedure have several benefits over AH in terms of early ambulation mean days 1.75 in VH vs 2.25 days in AH, less need of analgesic doses postoperatively in 2.80% cases of VH/in 5.11% cases of AH, resumption of bladder/bowel activity in 8.62% cases of VH/in 18.75% cases of AH, and hospital stay of pt of VH for mean days of 4.44 and patient of AH for mean days of 6.96. Studies done by Jain et al. and Sushil et al.^{6,7} in 170 cases showed that NDVH offers several benefits over AH in terms of less intraoperative blood loss, less febrile morbidity, low postoperative complications, fast recovery time, less hospital stay; thus the vaginal route is the choice of operation. Multiple authors have suggested less intraoperative blood loss and better postoperative outcomes in vaginal hysterectomies compared to laparoscopic and abdominal hysterectomies.^{8–13}

In our study in the VH group, maximum cases belonged to the age group of 36–40 years (Table 1). Maximum cases (i.e., 40 cases) were fourth para and above. An estimated 48% cases had complaints of DUB, 32% had fibroid uterus, 8% cases had adenomyosis, and 12% cases had PID. In patients of AH, maximum cases (i.e., 36% cases) are of the age group 36–40 years. Maximum cases (66%) were third para. An estimated 52% cases had complaints of DUB, 20% had fibroid uterus, 12% had adenomyosis, and 16% had PID (Table 1).

In 42% cases, only one sponge got completely soaked in patients of VH. In maximum cases (36%), one sponge got moderately soaked with blood in patients of AH (Table 2) and this was statistically significant. Of the 100 cases, there were no cases of bladder and bowel injury. There were 8 cases who required blood

Table 1: Distribution of cases according to age, parity, and indication of hysterectomy

Age (in years)	Group I (conventional nondescent vaginal hysterectomy)		Group II (nondescent vaginal hysterectomy using debulking procedures)	
	No.	%	No.	%
30–35	8	8	14	14
36–40	40	40	36	36
41–45	34	34	30	30
46–50	12	12	16	16
>50	08	08	04	04
Parity	—	—	—	—
Para 1	—	—	04	04
Para 2	28	28	28	28
Para 3	32	32	44	44
Para 4 and above	40	40	24	24
Indication of hysterectomy				
DUB	48	48	52	52
Adenomyosis	08	08	12	12
Fibroid	32	32	20	20
PID	12	12	16	16

Table 2: Mean time taken blood loss and intraoperative complications during surgery

	Group I (conventional nondescent vaginal hysterectomy)		Group II (nondescent vaginal hysterectomy using debulking procedures)	
	No.	%	No.	%
Amount of blood loss				
Slightly soaked one sponge	—	—	16	16
Moderately soaked one sponge	22	22	32	32
Completely soaked one sponge	42	42	28	28
More than one completely soaked sponge	36	36	24	24
Chi-square	67.929			
p value	$p > 0.01$ (not significant)			
Mean time taken in operation (in minutes)	44.50 ± 8.246		36.40 ± 9.502	
Intraoperative complications				
Bowel injury	—	—	—	—
Bladder injury	—	—	—	—
Hemorrhage (requiring blood transfusion)	08	08	06	06
Need for conversion to abdominal route	02	02	—	—

transfusion postoperatively and 2% cases had to be converted into abdominal route during surgery in group of NDVH patients. No surgical complications were seen and 6% cases required blood transfusion postoperatively in the group of AH patients. Maximum number of cases required 46–50 minutes for NDVH and 26–30 minutes for AH (Table 2).

Maximum cases (56%) required catheterization for 36–48 hours and 36% cases got mobile in 37–48 hours after surgery in NDVH group, while in patients of AH, 40% required catheterization for 36–48 hours. Moreover, 42% cases got mobile in 25–36 hours (Table 3).

The postoperative complaints and in followup complains, febrile morbidity was noticed in 12 cases (Table 3). Bleeding per vaginum was noticed in 6 cases and 8 cases complained of urinary tract infection in patients of NDVH. However, in patients of AH, febrile morbidity was noticed in 4 cases and urinary tract infection in 2 cases (Table 4).

Above results show that no appreciable difference was found in the nondescent vaginal hysterectomy performed in the debulking procedures group when compared to the conventional nondescent vaginal hysterectomy group as far as intraoperative complications, postoperative catheterization, postoperative duration of intravenous drip, reappearance of bowel sounds, postoperative mobilization, and postoperative duration of hospital stay are concerned.

CONCLUSION

An enlarged uterus tests the patience, surgical ability, and enthusiasm of the gynecologist. Whatever be the reason for uterine enlargement, one thing stands out in common and that is, a grossly reduced working space in the vagina. Depending on the type of the enlargement, be it uniform or irregular, bisection of the uterus, morcellation, coring, spiral incision and traction, wedge excision, myomectomy, and cervical wedge have been put to use with

Table 3: Distribution according to postoperative parameters and the postoperative complaints

	Group I (conventional nondescent vaginal hysterectomy)		Group II (nondescent vaginal hysterectomy using debulking procedures)	
	No.	%	No.	%
Postoperative parameters				
Mean time of mobilization of patient in the post-operative ward (in hours)	31.92 ± 7.945		27.12 ± 9.985	
Mean duration of catheterization required	42.48 ± 3.973		33.60 ± 3.812	
Mean duration of hospital stay	4.98 ± 0.718		4.04 ± 0.851	
Postoperative complaints				
Febrile morbidity	12	12	04	04
Discharge per vaginum	06	06	—	—
Urinary tract infection	08	08	02	02
Chi-square	12.583			
p value	p < 0.01 (significant)			

Table 4: Postoperative complaints during follow-up

Complaints	Group I (conventional nondescent vaginal hysterectomy)		Group II (nondescent vaginal hysterectomy using debulking procedures)	
	No.	%	No.	%
Discharge P/V	12	12	02	02
Low backache	20	20	06	06
Bleeding P/V	04	04	—	—
Urinary complaints	16	16	06	06
Chi-square	49.662			
p value	p < 0.01 (significant)			

appreciable success in the vaginal delivery of large-sized uteri during a vaginal hysterectomy.

By virtue of conserving operating time and avoidance of an undue pull on the suspensory ligaments, a better postoperative recovery, lesser morbidity, and better overall acceptance of the procedure is achieved.

The debulking procedure, though may appear to be more mutilating, provide the surgeon the above-said advantages.

It is therefore recommended that when the going becomes difficult in delivering the uterus in masse, there should be no hesitation in adopting a particular debulking procedure as the situation may demand.

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