Original Article

Vaginal Vault Prolapse In Obese Females Following Total Hysterectomy- An Observational Study

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Abstract

Introduction: Most common surgical intervention in gynecology remains total hysterectomy done in 30% to 60% of cases with steadily increasing incidence every year with the most common indication being uterine bleeding and fibroids not managed conservatively along with endometrial and cervical cancer.

Aim: To assess Vaginal vault prolapse in obese females following total hysterectomy.

Methods: The study included 282 obese females of age between 40-80 years, undergoing total hysterectomy; two surgical techniques were assessed for apical prolapse prevention following total hysterectomy.

Results: Following long-term assessment after hysterectomy, most of the obese females were satisfied with the surgical procedures and noted an improvement in their quality-of-life following hysterectomy.

Conclusion: The present study concludes that vagina vault prolapse is prevented with a new surgical technique owing to fixed seam, reduced Douglass space by lifting and stretching, and enterocele formation. Sexual function is also not disturbed by the maintained horizontal vaginal axis by this technique.

Keywords: Obesity, hysterectomy, prolapse, uterine bleeding, uterine fibroids

INTRODUCTION

Prolapse of genitalia is a multi-factorial entity necessitating the standardized treatment method choice along with the individualized method of the surgical correction for the affected subject. Prolapse of the vaginal vault following hysterectomy where the anterior wall of the rectum, the bladder, and vaginal vault form a hernial bulge from the vaginal canal, which, at the later stages herniates beyond the vaginal opening.[1] This condition poses a psychological and socio-economic burden on the affected subjects decreasing their quality of life. The vaginal vault prolapse at different settings has a varying incidence rate of 19% to 50%.[2]

A comprehensive approach can improve the clinical outcomes following surgical management of the subject with vaginal vault prolapse and reduce the relapse rate and immediate and long-term adverse effects.[3] Further addition to this complication remains that nearly 2/3rd of the females with vaginal vault prolapse are obese where various technical difficulties during hysterectomy are encountered owing to the pronounced fat layer. The increase in the obesity incidence in females has recently, which further adds to the complications.[4]

Vaginal vault prolapse is usually associated with different undesirable outcomes causing affected subjects, severe discomfort, and is usually associated with defecation problems, frequent urination, urinary incontinence, and/or severe pain.[5] In cases with complete vaginal vault prolapse following hysterectomy, mucus membrane present along the walls undergo various injuries that can be severe leading to tissue death, abscess, and infectious diseases. The conventional surgical technique did not eliminate the pathology completely, and hence a new method was developed by Shomirov DA et al[6] in 2021 which modified the conventional technique by keeping a fixed seam, reducing Douglass space by lifting and stretching, and enterocele formation. Sexual function is also not disturbed by the maintained horizontal vaginal axis by this technique. The present study assessed two techniques concerning vaginal vault prolapse prevention.

MATERIALS AND METHODS

The present study was done to assess the two techniques concerning vaginal vault prolapse prevention. The study population was comprised of the subjects of the Department of Obstetrics and Gynecology of the Institute.
The study included a total of 282 obese females undergoing hysterectomy due to uterine fibroids with abdominal access. The inclusion criteria for the study were 282 females between the age of 40-80 years undergoing hysterectomy, confirmed diagnosis of uterine fibroids, and subjects willing to participate in the study. The exclusion criteria were subjects not fit for surgery or general anesthesia, subjects not willing for surgery, and subjects not giving consent.
After explaining the detailed study design, informed consent was taken from all the subjects in written and verbal form. Following the final inclusion, detailed history was taken from all the subjects followed by examination followed by planning for the surgery for uterine fibroids in obese females.
Diagnosis is made based on the history, clinical examination, and laboratory parameters. The present study relied on gynecologic status, examination, and interview methods were used as research methods. In laboratory parameters, routine blood investigation and hematocrit were done prior to and the second day following surgery, and special examination included blood clotting sequence. The cultures taken from the urethra, vagina, and cervical canals were examined. Additional examinations were also done including abdominal and transvaginal ultrasound, MRI (magnetic resonance imaging), CT (computed tomography) scan, and Doppler study.

RESULTS

The present study was done to assess the two techniques concerning vaginal vault prolapse prevention. The study included a total of 282 obese females between the age of 40-60 years undergoing hysterectomy due to uterine fibroids with abdominal access. The maximum blood loss was significantly higher in the control group, 290.5±26.8, where conventional surgery technique was used in comparison to studying groups where the modified technique was used where ligaments were fixed and a single thread was used for twisted sutures on the back and front wall of the vaginal vault, 205.4±18.6 with $p<0.005$. The surgery duration was also significantly higher in the control group, 98.4±5.8, where conventional hysterectomy was done compared to the study group, 52.3±1.7 where the modified technique was used with $p<0.005$ as shown in Table 1.
On assessing the weight of the gross specimens, the weight of the removed specimen was higher for the control group with the conventional technique, 768.02±26.3, compared to the study group where the modified technique was used, 754.02±38.3. However, this difference was statistically non-significant with $p>0.05$. The uterus size was more, 17.7±0.6 weeks where the modified technique was used compared to the control group, 16.6±0.7 where the conventional technique was used. This difference was also statistically non-significant with $p>0.05$ (Table 1).
Concerning the postoperative features, postoperative days in bed were significantly higher in the control group, 8.2±1.5 days compared to 4.5±1.3 days in the study groups which was statistically significant with $p<0.05$. On assessing the day when the elevated temperature was seen in less than 3 days in 8.04% (n=14) subjects which were lesser in control groups, in 20.37% (n=22) study subjects. In 3-5 days postoperative, elevated temperature was seen in 51.85% (n=-56) study subjects, and in 5.55% (n=6) subjects on 6-10 days postoperatively (Table 2).
On assessing the range of temperature postoperatively in the study subjects, the range of 37.2°C-37.4 °C was seen in 24.13% (n=42) subjects of the study group compared to 25.92% (n=28) subjects in the control group, 37.5°C to 38 °C was not seen in any subject of the study group and 37.03% (n=40) subjects of the control group, and >38 °C was also not seen in any subject of the study group and 14.81% (n=16) subjects of the control group. Fever was reported in 12.64% (n=22) subjects from study group and was significantly higher in control group in 77.7% (n=84) subjects ($p<0.05$). Culcit has not seen in any subject of the study group and 20.37% (n=22) subjects from the control group as shown in Table 2.

DISCUSSION

The present study was done to assess the two techniques concerning vaginal vault prolapse prevention. The study included a total of 282 obese females between the ages of 40-60 years undergoing hysterectomy due to uterine fibroids with abdominal access. The maximum blood loss was significantly higher in the control group, 290.5±26.8, where conventional surgery technique was used in comparison to studying groups where the modified technique was used where ligaments were fixed and a single thread was used for twisted sutures on the back and front wall of the vaginal vault, 205.4±18.6 with $p<0.005$. The surgery duration was also significantly higher in the control group, 98.4±5.8, where conventional hysterectomy was done compared to the study group, 52.3±1.7 where the modified technique was used with $p<0.005$. These characteristics were comparable to the studies of Mgeliashvili MV et al[7] in 2015 and Puchkov KV et al[8] in 2005 where authors assessed subjects with characteristics comparable to the present studies.
Concerning the weight of the gross specimens, the weight of the removed specimen was higher for the control group with the conventional technique, 768.02±26.3, compared to the study group where the modified technique was used, 754.02±38.3. However, this difference was statistically non-significant with $p>0.05$. The uterus size was more, 17.7±0.6 weeks where the modified technique was used compared to the control group, 16.6±0.7 where the conventional technique was used. This difference was also statistically non-significant with $p>0.05$. These results were comparable to the studies of Gasparov AS et al[9] in 2014 and Dovlatov ZA et al[10] in 2015 where authors reported uterus size and weight of removed specimen were consistent with the present study.
On assessing the postoperative features, postoperative days in bed were significantly higher in the control group, 8.2±1.5 days compared to 4.5±1.3 days in the study groups which was statistically significant with $p<0.05$. On assessing the day when the elevated temperature was seen in less than 3 days in 8.04% (n=14) subjects which were lesser in control groups, in 20.37% (n=22) study subjects. In 3-5 days postoperative, elevated temperature was seen in 51.85% (n=-56) study

subjects, and in 5.55% (n=6) subjects on 6-10 days postoperatively. These results were in agreement with the studies of Ghetti C[11] in 2018 and Shalaev ON et al[12] in 2017 where authors reported postoperative parameters following hysterectomy similar to the present study.

For the range of temperature postoperatively in the study subjects, the range of 37.2°C-37.4 °C was seen in 24.13% (n=42) subjects of the study group compared to 25.92% (n=28) subjects in the control group, 37.5°C to 38 °C was not seen in any subject of the study group and 37.03% (n=40) subjects of the control group, and >38 °C was also not seen in any subject of the study group and 14.81% (n=16) subjects of the control group. Fever was reported in 12.64% (n=22) subjects from study group and was significantly higher in control group in 77.7% (n=84) subjects ($p<0.05$). Culcit has not seen in any subject of the study group and 20.37% (n=22) subjects from the control group. These findings were in line with the findings of Fedorov AA et al[13] in 2005 and Navruzov BS[14] in 2014 where postoperative temperature range, fever, and culcit were comparable to the present study.

CONCLUSION

Considering its limitations, the present study concludes that vagina vault prolapse is prevented with a new surgical technique owing to fixed seam, reduced Douglass space by lifting and stretching, and enterocele formation. Sexual function is also not disturbed by the maintained horizontal vaginal axis by this technique. However, the present study had a few limitations including a small sample size, short monitoring time, and geographical area biases. Hence, more longitudinal studies with larger sample size and longer monitoring period will help reach a definitive conclusion.

Conflicts of interest: Nil

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TABLES

Characteristics	Study Group	Control Group
Blood Loss (ml)	205.4±18.6	290.5±26.8
Gross specimen weight (grams)	754.02±38.3	768.02±26.3
Surgery duration (minutes)	52.3±1.7	98.4±5.8
Uterus size (weeks)	17.7±0.6	16.6±0.7

Table 1: Surgery characteristics of the study subjects

Characteristics	Study Group % (n=174)	Control Group % (n=108)
Postoperative days in bed	4.5±1.3	8.2±1.5
Elevated body temperature (days)		
<3	8.04 (14)	20.37 (22)
3-5	-	51.85 (56)
6-10	-	5.55 (6)
Elevated temperature range		
37.2°C-37.4 °C	24.13 (42)	25.92 (28)
37.5°C to 38 °C	-	37.03 (40)
>38 °C	-	14.81 (16)
Fever	12.64 (22)	77.7 (84)
Culcit	-	20.37 (22)

Table 2: Early postoperative course in the two groups of study subjects