

# Effect of Prior Uterine Artery Ligation during Abdominal Hysterectomy

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## ABSTRACT

**Aim:** To determine the effect of prior ligation of uterine artery during abdominal hysterectomy on the amount of blood loss and duration of procedure.

**Method:** It was a randomized controlled trial. Total 40 ladies who had hysterectomies due to benign causes were included in the study and they were randomly divided in two groups. Group A had ladies who had hysterectomy in the conventional way and Group B include those ladies in whom the uterine artery was ligated prior to other pedicles.

**Results:** Average amount of blood loss in group A was 200ml and in group B was 150 ml. Total duration of surgery was 90minutes in group A and 75 minutes in group B.

**Conclusion:** Prior ligation of uterine artery during abdominal hysterectomy is an effective technique to reduce amount of blood loss and total duration of surgery.

**Keywords:** uterine artery, hysterectomy

## INTRODUCTION

Hysterectomy is one of the most commonly performed procedures in gynecological surgeries.<sup>1</sup> It is used as a permanent treatment of fibroid uterus, irregular vaginal bleeding, endometriosis, and adenomyosis. There are different routes for performing hysterectomy like abdominal, vaginal and laparoscopic<sup>2</sup>. Most commonly used route is abdominal<sup>3</sup>. There is always a risk of blood loss and hemorrhage during hysterectomy as it is a major gynecological surgery. Different techniques are used to reduce the blood loss during hysterectomy and to improve patient outcome after surgery. Uterine artery is the major blood supply of the uterus. Conventionally we ligate uterine artery after the cornual pedicles. We conducted this study to find out the effect of early uterine artery ligation before clamping and ligating other pedicles during abdominal hysterectomy.<sup>4</sup> The effect of prior uterine artery ligation on amount of blood loss and on total duration of surgery is determined.

## MATERIAL/METHODS

This study was conducted in the Department of Obstetrics & Gynaecology, Shalamar Medical and Dental College Lahore from October 2017 to March 2018. It was a randomized control trial. Total 40 ladies who met inclusion criteria and underwent hysterectomy during the study period were included in the study. We included the women who have hysterectomy for benign conditions like fibroids, heavy menstrual bleeding and adenomyosis. The women who have hysterectomies due to extensive endometriosis and malignancies were excluded from the study. All the study subjects were randomly divided in two groups. Group A include those ladies in whom hysterectomy done in a conventional way that is uterine artery ligated after ligating round ligament and tubo-ovarian pedicles. Group B include those ladies in whom the uterine artery is ligated early at

the very beginning of hysterectomy, before ligating other pedicles and the effect of ligating the uterine artery is determined on the duration of procedure and amount of blood loss during surgery.

## RESULTS

Total 40 ladies who underwent hysterectomy were included in the study. The age of the females is between 46 to 51 years and meanage was 48.5 years. The parity of the women ranges between 3 and 6. These ladies were randomly divided in two groups. Group A include 20 women who had hysterectomy in the conventional manner without prior ligation of uterine artery and group B had 20 women who had hysterectomy after prior ligation of uterine artery. The indications of surgery in both groups are shown in table.

Indications of surgery	Group A	Group B
Fibroid uterus	10	8
Dysfunctional uterine bleeding	8	9
Adenomyosis	2	3

The comparison of blood loss during surgery in both groups show the average blood loss in group A was 200ml and in group B was 150 ml.

Amount of blood loss:

Group A	Group B	P value
200 ML	150 ML	0.05

The average duration of surgery is 90 minutes in group A and 75 minutes in group. P value calculated is 0.05 that is statistically significant

Duration of surgery:

Group A	Group B	P value
90 Minutes	75 Minutes	0.05

The results of the study show the amount of blood loss and total duration of surgery both are reduced if hysterectomy is performed with prior uterine artery ligation.

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## DISCUSSION

Blood loss during hysterectomy can be reduced by prior ligation of the uterine artery. The work of Kale A et al in 2014 in which uterine artery was ligated before laparoscopic hysterectomy has similar results<sup>5</sup>.

Dilip Kumar Dutta and Indranil Dutta conducted study in west Bengal also concluded that prior ligation of uterine arteries is a safe procedure and it decreases the risk of intra and post-operative complications.<sup>6</sup> Different techniques can be used to identify the uterine artery. We used lateral approach in which window is created I the broad ligament and the ascending branch is identified close to isthmus and uterine artery is ligated close to uterus at this level. Vicryl no 1 is used to ligate the blood vessel. When both uterine arteries were ligated fundus of uterus became pale showing blood supply of the uterus is occluded resulting in ischemia. The benefit of ligation of uterine artery close to uterus is that it will avoid the complications of damaging to the ureter. There are no major complications in both groups. The study is comparable to the study of Poojary et al that no major complications occur in both groups<sup>7</sup>.

Our study concludes that the total duration of surgery was less in group B than in group A. Sinha R also concluded that prior uterine artery ligation reduces the blood loss and surgery time<sup>8</sup>.

The limitation of the study is that it is done in small number of patients in our hospital; we suggest similar studies should also be conducted in other hospitals to find out the effectiveness of prior uterine artery ligation during hysterectomy.

## CONCLUSION

Prior uterine artery ligation during abdominal hysterectomy is an effective technique to reduce blood loss and operation time during surgery.

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