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LAPAROSCOPIC HYSTERECTOMY;

COMPARISON OF TOTAL LAPAROSCOPIC HYSTERECTOMY VERSUS TOTAL ABDOMINAL HYSTERECTOMY: AN ASSESSMENT OF THE LEARNING CURVE; RANDOMIZED CONTROL STUDY.

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ABSTRACT... Hysterectomy is one of the most frequently performed gynaecological procedure in female. **Objectives:** The purpose of this study was to compare the outcome between total laparoscopic hysterectomy and abdominal hysterectomy regarding blood loss during surgery, surgical time and postoperative hospital stay. **Settings:** Department of Gynecology & Obstetrics Allied Hospital, Faisalabad Medical University, Faisalabad. **Period:** 1st January 2016 - 31st December 2016 (1 Year). **Study Design:** Randomized control Study. **Material & Methods:** The ethical committee of Faisalabad Medical University, Faisalabad approved the study protocol. The patient demographical characteristics were similar in both groups. 112 patients were enrolled. Including 56 case of total laparoscopic hysterectomy and 56 cases of abdominal hysterectomy which meets inclusion criteria. **Result:** Average blood loss in TLH was 83.09+10.74ml while it was 387.88+59.54ml in TAH. When both groups were compared regarding operative time, it was 76.73+20.2min in TLH while it was 84.7+19.9 in TAH. Postoperative stay in the hospital was 1.25+0.44 days in TLH while it was 5.72+0.83 in TAH. **Conclusion:** The laparoscopic hysterectomy is a modern surgical method in current gynecological practice. With increasing experience and good collaboration of surgical team, time duration can be shortened and blood loss can be reduced to negligible.

Keywords: Total Laparoscopic Hysterectomy (TLH). Total Abdominal Hysterectomy (TAH), Laparoscopic Assisted Vaginal Hysterectomy (LAVH).

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INTRODUCTION

In the past gynaecologists were performing hysterectomies by abdominal and vaginal route till 1989 when Reich introduced Laparoscopic Assisted Vaginal Hysterectomy (LAVH).[1] Total Laparoscopic hysterectomy is found to be a safe method of hysterectomy with minimal complications.[2] As compared to total abdominal hysterectomy lesser blood loss, less per-operative complications betterment in quality of life, shorter postoperative stay and faster return to routine work was seen after laparoscopic hysterectomy.[3,4] However most gynaecologists are still doing hysterectomies by abdominal and vaginal route[5] due to prolong learning curves and inadequate training of surgeons in laparoscopy.

In this Randomized Control study laparoscopic hysterectomy was compared with abdominal hysterectomy.

MATERIAL AND METHODS

The ethical committee of Faisalabad Medical University, Faisalabad allowed the study protocol.

Settings

Department of Gynecology & Obstetrics Allied Hospital, Faisalabad Medical University, Faisalabad.

Sample Size

112 patients. 56 patients underwent Laparoscopic hysterectomy and 56 patients underwent abdominal hysterectomy.

Age of patients
45-60 years.

Sampling Technique
Randomized Control Study.

Inclusion Criteria
The patients having following criteria were included in the study.
- Abnormal uterine bleeding due to fibroids endometrial pathology and adenomyosis.
- Dysfunctional uterine bleeding

Exclusion Criteria
- Morbid obesity (BMI > 40)
- Large fibroids
- Previous abdominal surgeries
- Uterus size >16 weeks of pregnancy.

Surgical Technique
The TLH and TAH was performed by team comprising experienced Gynecologist and one general surgeon. All patients for surgery were admitted to hospital two days before surgery for preoperational bowel preparation.

The patients for TLH were placed in steep trendelenburg position under general anesthesia. Urinary bladder was empted with foley's catheter and kept in situ. At the beginning of total laparoscopic hysterectomy uterine size was measured and specially designed vaginal manipulator which was a version of K.STORZ manipulator was introduced.

After CO_2 pneumoperitoneum, 10mm trocar was placed in the supraumbilical site to introduce the laparoscope and camera.

The two lateral trocar of 10mm on right side and other 5mm on left side were introduced. After an accurate abdominopelvic inspections lysis of any adhesions were performed. The uterus was then mobilized by uterine manipulator making various anatomical planes more accessible. The abdominal pressure was maintained at 12mm of Hg. The round ligaments along with tubo-ovarian pedicle were coagulated and cut and with help of 10mm ligasure. Thereafter vesicouterine peritoneal fold was picked by grasper and separated with 5mm ligasure and bladder dissection was performed. In order to avoid bladder injury right cleavage plane should be identified.

The uterosacral ligments were thus coagulated with ligasure. In the next step cardinal ligaments were coagulated. With the help of coagulation hook colpotomy was done in circular fashion. The uterus was delivered through vagina. Peritoneal cavity washed with normal saline and haemostasis insured. Abdominal hysterectomy was performed by standard protocol as describe for benign diseases (Mattingly and Thompson, 1985).

The time of surgery was calculated as verres needle was inserted in TLH and TH when skin incision was given till the skin enclosure in both groups.

RESULTS
Out of 112 patients, 56 patients underwent total laparoscopic hysterectomy and 56 patients underwent abdominal hysterectomy. Intra-operative blood loss in TLH was 50-100ml (average 83.09+10.74ml) while in TAH it was 300-500ml (average 387.88+59.45ml) Time employed for the TLH was 45-100mins (average 76.32+20.2) while in TAH it was 50-120min (average 83.09+10.74). Post-operation hospital stay in case of TLH was 1-2 days (average 1.25+0.44) while in TAH it was 4-6 days (average 5.72+0.83) as in table I.

Variable	Group		p-Value
	Laparoscopic Hysterectomy	Total Abdominal Hysterectomy	
Operative time	76.73 ± 20.2	84.7 ± 19.9	0.044
Blood loss	83.09 ± 10.74	387.88 ± 59.54	0.0001
Post-operative hospital stay	1.25 ± 0.44	5.72 ± 0.83	0.00-1

Table-I. Comparison of Variables in both Groups

DISCUSSION
The objective of this study was to assess the

intra-operative blood loss, duration of surgery and postoperative stay in hospital between two groups. Many studies have been conducted to compare these parameters as well but in our setup that is Allied Hospital, Faisalabad, this was first study ever done in this hospital. The laparoscopic approach is better treatment modality in the current gynecological practice.[14]

Initially we use to do TLH in longer time than TAH group (150 vs. 90 min) but this surgical time was reduced with increasing experience. However, Malur et al, reported same time of surgery between LAVH and TAH groups.[14]

In our study, our patients stayed for two days after TLH while the patients who underwent TAH stayed for 4-6 days. This study is comparable to European studies. The studies conducted in North America also showed shorter postoperative stay as compare to European studies may be because of the different health insurance status.[6,7] Many other studies also reported that intra-operative blood loss is lesser in the Laparoscopic surgery (average 120ml).[8]

The benefits of laparoscopic procedures in improving patient safety, efficacy, and cost-effectiveness have led several national organizations, including the American College of Obstetricians and Gynecologists (ACOG) and American Association of Gynecologic Laparoscopists (AAGL,) to advocate for the use of minimally invasive approaches. The national rate of laparoscopic hysterectomy for benign cases increased from, 20% in 2007[9] to 32.2% in 2012.[10] Our study further demonstrated a gradual shift in laparoscopic hysterectomies from LAVH to TLH between 2007 and 2012, which may be attributed to increasing surgeon comfort with laparoscopic surgical techniques.[11]

The studies conducted in advance world showed decrease blood loss in laparoscopic surgery. Patients underwent TLH resume their normal activities earlier than TAH group.[12,13]

Initially we used to do TLH in longer time (upto 110 min) but this surgical time was reduced with increasing experience. However, Malur et al, reported same time of surgery between LAVH and TAH groups.[14]

CONCLUSION

There is significant difference in intra-operative blood loss and post operative hospital stay between TAH and TLH. So TLH should be offered as an alternative to TAH, if expertise is available. Availability of new equipment like Ligasure and especially designed vaginal manipulators has made laparoscopic approach more easier and acceptable treatment modality in current gynecological practice. With good experience and good collaboration of surgical team, time duration can be shortened with negligible blood loss during surgery.

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2	Javed Iqbal	Writing the article	
3	Tasnim Tahira	Data analysis	
4	Naureen Javed	Reviewed the study	
5	Shagufta Noor	Literature search + help in references	