Comparative Study between Subtotal Abdominal Hysterectomy with Electrocoagulation of Cervical Epithelium and Total Abdominal Hysterectomy

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Abstract

Objective: Is subtotal abdominal hysterectomy with thermal damage of endocervical canal better than total abdominal hysterectomy for benign lesions?

Design: Cross sectional study.

Setting: Zagazig University Hospital, Obstetrics and Gynecology Department From September 2011 – September 2012.

Population: 100 patients with benign gynaecological lesions designed to have abdominal hysterectomy.

Patients were divided into two groups:
Group A: 50 patients had subtotal abdominal; hysterectomy with thermal damage of endocervical canal.
Group B: 50 patients had total abdominal hysterectomy.

Methods: All patients were subjected to history taking, general examination and local examinations. Routine laboratory and pelviabdominal, and transvaginal ultrasound.

Intraoperative monitoring of blood loss, duration, blood transfusion units, complications.

In group A: Subtotal abdominal hysterectomy with thermal damage of endocervical canal done.
In group B: Total abdominal hysterectomy was done.

Main Outcome Measures: Postoperative follow-up: Early postoperative period: HB %, blood transfusion, pain and analgesic use, early mobilization, and hospital stay.

Results: Subtotal abdominal hysterectomy with thermal damage of endocervical canal in comparison to total abdominal hysterectomy for benign lesions, consume less operative time (60/120 minute), less blood loss (400/1000), less blood transfusion intraoperatively (1/2 units) and postoperatively (1/2 units), more haemoglobin level postoperative (12/10gm/dl), less analgesic use (6/11 amp NSAID), early ambulation (9/16 hours), less hospital stay (2/4 days) respectively.

Conclusions: Subtotal abdominal hysterectomy with thermal damage of endocervical canal better than total abdominal hysterectomy for benign lesions in this study.

Key Words: Total hysterectomy – Subtotal hysterectomy – Electrocoagulation – Cervical epithelium – Intra and postoperative follow-up.

Introduction

HYSTERECTOMY is one of the most frequently performed operations in the world, accounting for 500,000-600,000 procedures annually in the USA; the abdominal route for hysterectomy is the preferred route in 60-80% of these operations. Although the number of total abdominal hysterectomies performed annually has decreased, the number of subtotal abdominal hysterectomies increased by >400%. The major indications for abdominal hysterectomy include abnormal uterine bleeding, myomata uteri, adenomyosis, endometriosis, neoplasia, and chronic salpingitis. The basis for selection for subtotal versus total hysterectomy has little in the way of factual data to support it and may actually present some significant disadvantages, such as continued menstruation and cervical prolapse. The detailed technique for performing infrasacral abdominal hysterectomy relies heavily on precise knowledge of pelvic anatomy and compulsive detail to tissue handling. The consistent and correct usage of prophylactic antimicrobials, measures to prevent thromboemboli, and procedures to avoid urinary retention are key to the overall success of the surgery [1,2].

There is still controversy about the best technique for hysterectomy to reduce postoperative adverse effects. This randomized clinical study in Babol, Islamic Republic of Iran, compared some clinical complications and sexual functioning following subtotal (SAH) and total abdominal hysterectomy (TAH). A total of 150 women (50 allocated...
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to SAH and 100 to TAH) were followed-up at 6 months postoperatively. Length of hospitalization was 4.40 (SD 1.90) days after SAH and 4.48 (SD 1.67) days after TAH. Haemoglobin level, postoperative fever, symptoms of dyspareunia and frequency of sexual intercourse were not significantly different between the 2 groups of women. SAH did not show any significant benefits over TAH [3].

Hysterectomy using an abdominal approach removes either the uterus alone (subtotal hysterectomy) or both the uterus and the cervix (total hysterectomy). The latter is more common but outcomes have not been systematically compared. To assess and compare outcomes with subtotal hysterectomy versus total abdominal hysterectomy for benign gynaecological conditions. We searched the Cochrane Menstrual Disorders and Subfertility Group’s specialised register of controlled trials (December 2005), Central (December 2005), Medline (1966 to December 2005), Embase (1980 to December 2005), Biological Abstracts (1980 to December 2005), the National Research Register and relevant citation lists. Only randomised controlled trials of women undergoing either total or subtotal hysterectomy for benign gynaecological conditions were included. Three trials that included 733 participants were included. Independent selection of trials and data extraction were undertaken by 2 reviewers and results compared. There was no evidence of a difference in the rates of incontinence, constipation or measures of sexual function. In one unblinded trial, a significantly greater proportion of women indicated that they had frequent episodes of urinary incontinence after subtotal hysterectomy when compared with total hysterectomy (OR=2.1, 1.02 to 4.3), but these results were not confirmed by the other two trials that measured both stress and urge incontinence and urinary frequency. Length of surgery and amount of blood lost during surgery were significantly reduced during subtotal hysterectomy when compared with total hysterectomy, but there was no evidence of a difference in the odds of transfusion. Febrile morbidity was less likely (OR=0.43, 0.25 to 0.75) and ongoing cyclical vaginal bleeding one year after surgery was more likely (OR=11.3, 4.1 to 31.2) after subtotal when compared with total hysterectomy. There was no evidence of a difference in the rates of other complications, recovery from surgery or readmission rates. This review has not confirmed the perception that subtotal hysterectomy offers improved outcomes for sexual, urinary or bowel function when compared with total abdominal hysterectomy. Surgery is shorter and intraoperative blood loss and fever are reduced but women are more likely to experience ongoing cyclical bleeding up to a year after surgery with subtotal hysterectomy compared to total hysterectomy [1].

Material and Methods

This is a cross sectional study done at Zagazig University Hospital, Obstetrics and Gynecology department. From period between September 2011 tell September 2012. Ethics approval was obtained from Zagazig University ethical committee. All patients had benign gynaecological lesion and decision was hysterectomy. All patients were prepared for operative intervention. Information about the study was available to patient during consenting. The author (W.S) had discussed the procedures with patients and they accepted and consented.

Funding:

All patients included in the study were at fund of Zagazig University Hospitals.

Study population:

Institutional review board (IRB) approval was taken before the study (August 2011) under number 936 and patients consent after explanation of procedure to them.

100 patients with benign gynaecological lesions designed to have abdominal hysterectomy.

Patients were divided into two groups:

Group A: 50 patients had subtotal abdominal hysterectomy with thermal damage of endocervical canal.

Group B: 50 patients had total abdominal hysterectomy.

All patients were subjected to history taking, general examination and local examination. Routine laboratory and pelviabdominal, and transvaginal ultrasound.

Intraoperative monitoring of blood loss, duration, blood transfusion units, complications.

In group A: Subtotal abdominal hysterectomy with thermal damage of endocervical canal was done.

In group B: Total abdominal hysterectomy was done.

Postoperative follow-up: Early postoperative period: HB %, blood transfusion, pain and analgesic use, early mobilization, and hospital stay.
Results

Subtotal abdominal hysterectomy with thermal damage of endocervical canal in comparison to total abdominal hysterectomy for benign lesions, consume less operative time (60/120 minute), less blood loss (400/1000), less blood transfusion intraoperatively (1/2 units) and postpertively (1/2 units), more haemoglobin level popstopertive (12/10gm/dl), less analgesic use (6/11 amp NSAID), early ambulation (9/16 hours), hospital stay (2/4 days) respectively.

Table (1): Patients clinical criteria.

<table>
<thead>
<tr>
<th></th>
<th>Mean/number</th>
<th>Range/percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>60</td>
<td>45-75</td>
</tr>
<tr>
<td>Benign ovarian lesions</td>
<td>16</td>
<td>16%</td>
</tr>
<tr>
<td>Fibroid</td>
<td>52</td>
<td>52%</td>
</tr>
<tr>
<td>Endometrial hyperplasia</td>
<td>28</td>
<td>28%</td>
</tr>
<tr>
<td>Adeomysis</td>
<td>4</td>
<td>4%</td>
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</tbody>
</table>

Table (2): Intraoperative monitoring.

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative time (minute)</td>
<td>60</td>
<td>125</td>
</tr>
<tr>
<td>Blood loss (ml)</td>
<td>400</td>
<td>1000</td>
</tr>
<tr>
<td>Blood transfusion (unit)</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Table (3): Postoperative monitoring.

<table>
<thead>
<tr>
<th></th>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemoglobin (gm/dl)</td>
<td>12</td>
<td>10-14</td>
</tr>
<tr>
<td>Analgesic NSAID (amp)</td>
<td>6</td>
<td>4-8</td>
</tr>
<tr>
<td>Blood transfusion (unit)</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Early ambulation</td>
<td>9</td>
<td>6-12</td>
</tr>
<tr>
<td>(hours after surgery)</td>
<td></td>
<td>10-12</td>
</tr>
</tbody>
</table>

Fig. (1): Indications of hysterectomies in our study.

Discussion

Main findings:

Total abdominal hysterectomy and subtotal abdominal hysterectomy are very beneficial for benign gynaecological lesions. Total abdominal hysterectomy needs more steps than subtotal abdominal hysterectomy for removing the cervix with increased time and risk of more bleeding. Subtotal abdominal hysterectomy needs less operative time and less bleeding, but mucosa of the cervix represent risk factor for development of any cervical lesion or tumours, so if the mucosa destroyed by diathermy these risk factor are ended with benefit of less operative time and less blood loss.

Strengths:

In this study 100 patients were included and divided into two groups: 50 patients for subtotal abdominal hysterectomy and cervical diathermy, another 50 patients for total abdominal hysterectomy and early observations intraoperative and postoperative were done.

Limitations:

We found that subtotal abdominal hysterectomy with thermal damage of endocervical canal in comparison to total abdominal hysterectomy for benign lesions consume less operative time (60/120 minutes), less blood loss (400/1000), less blood transfusion intraoperatively (1/2 units) and postpertively (1/2 units), more haemoglobin level popstopertive (12/10gm/dl), less analgesic use (6/11 amp NSAID), early ambulation (9/16 hours), less hospital stay (2/4 days) respectively.

Interpretation:

As regards to Cochrane 2012; as mentioned by Lethaby [4]; there were no differences in short term outcome as blood loss and operative time but cervical mucosa diathermy was not included in studies included in Cochrane 2012 as mentioned that; Nine trials including 1553 participants were included. Independent selection of trials, assessment for risk of bias and data extraction were undertaken by two review authors and the results compared. There was no evidence of a difference in the rates of multiple outcomes that assessed urinary, bowel or sexual function between TH and STH, either in the short term (up to two years post-surgery) or long term (nine years post-surgery). Length of operation (difference of 1 1 min) and amount of blood lost during surgery (difference of 57ml) were significantly reduced during subtotal hysterectomy when compared with total hysterectomy. These differences are unlikely to constitute a clinical benefit and there was no evidence of a difference
in the odds of blood transfusion. Post-operative fever and urinary retention were less likely (fever: OR 0.48, 95% CI 0.3 to 0.8; retention: OR 0.23, 95% CI 0.1 to 0.8) and ongoing cyclical vaginal bleeding up to two years after surgery was more likely (OR 16.0, 95% CI 6.1 to 41.6) after STH compared with TH. There was no evidence of a difference in the rates of other complications, recovery from surgery, alleviation of pre-surgery symptoms or readmission rates between the two types of hysterectomy carried out through the abdominal or laparoscopic route, although trials comparing the laparoscopic route were underpowered to detect some differences. This review has not confirmed the perception that subtotal hysterectomy offers improved outcomes for sexual, urinary or bowel function when compared with total abdominal hysterectomy. Women are more likely to experience ongoing cyclical bleeding up to a year after surgery with subtotal hysterectomy compared to total hysterectomy.

As regards to Hysterectomy Multicentre Study Group in South-East Sweden 2010; as mentioned by Persson [5]; the result was similar regarding pain and postoperative hospital stay but they use psychometric measurement that not used in our study as they mentioned that; Two-hundred women scheduled for hysterectomy for benign conditions were enrolled in the study, and 178 women completed the study. Ninety-four women were randomised to subtotal abdominal hysterectomy; 84 women were randomised to total abdominal hysterectomy. The day-by-day recovery of general wellbeing was measured on a visual analogue scale in a diary 7 days preoperatively and 35 days post-operatively. Psychometric measurements included depression, anxiety and general psychological wellbeing. Effects of operating method and preoperative wellbeing on the day-by-day recovery and duration of sick leave. No significant difference was found in the day-by-day recovery between operating methods. The day-by-day recovery of general wellbeing and duration of sick leave was strongly associated with the occurrence of minor complications, but not with major complications. The level of psychological wellbeing preoperatively was strongly associated with the day-by-day recovery of general wellbeing and duration of sick leave. Day-by-day recovery of general wellbeing is no faster in subtotal versus total abdominal hysterectomy. Independent of operation method there is an interaction between preoperative psychological wellbeing, postoperative recovery of general wellbeing and the duration of sick leave. Postoperative complications and preoperative psychological wellbeing are strong determinants for the duration of sick leave. There is a need for intervention studies with a focus on complications and preoperative wellbeing.

As regards sexual impact of hysterectomy which is long term outcome that not in desing of this study, Lonnée-Hoffmann, et al., [6], mentioned that; There is a lack of knowledge about partners’ sexual experience after hysterectomy. The aim of this study was to explore potential differences in the experience of sexual intercourse by the partner, related to the operation method (subtotal versus total abdominal hysterectomy). Of all patients having undergone abdominal hysterectomy for benign indications at St Olav Hospital, Trondheim between February 2001 and March 2003, Norway, 120 patients (60 total, 60 subtotal abdominal hysterectomy) were identified. Each patient and partner received a postal questionnaire addressing sexuality in connection with the operation. Of the 240 questionnaires, 111 were returned, a response rate of 46%. Among partners of women having undergone total hysterectomy, proportionally more noticed during sexual intercourse that the uterus had been removed (12%) compared to partners of women having undergone subtotal hysterectomy (4%); this was not significant and all of these partners experienced this as positive. Sexual satisfaction was improved or unchanged in most women and their partners, regardless of operation type. Partners who reported poor satisfaction before the operation were significantly more likely to report poor satisfaction after the operation. A high proportion of partners in both hysterectomy groups had not discussed sexuality in relation to the surgery either before or after the operation (subtotal: 44%; total: 24%; not significant). The majority of women and their partners reported no negative impact on sexual satisfaction after abdominal hysterectomy, regardless if subtotal or total. The only predictor of negative sexual experience of partners after hysterectomy was negative sexual experience before hysterectomy. Thakar, et al., [7] mentioned that; To conduct a prospective and concurrent evaluation of changes in health status and quality of life and psychological outcome measures over one year in women randomised to total or subtotal abdominal hysterectomy. The concurrent evaluation was the impact of total versus subtotal hysterectomy on bladder, bowel and sexual function. Prospective, randomised, double-blind study. A large UK Teaching Hospital (St George's Hospital, London) and a large District General Hospital (Mayday University Hospital, Croydon). METHODS. Two hundred and seventy-nine women undergoing hysterectomy for benign disease were randomly allocated to total hysterectomy (n=146) or subtotal hysterectomy.
As regard of using new energy sources like LigaSure that not used in our study, we use original diathermy system and suturing in the form of absorbable sutures Vicryl, Hagen, et al., [8] mentioned that; To compare the use of LigaSure with conventional suture ligature in abdominal hysterectomy. Pilot randomised controlled unblinded trial with block randomisation according to three operating surgeons. One Norwegian teaching hospital, Department of Gynaecology and Obstetrics. Thirty women who underwent total or subtotal abdominal hysterectomy. Data, with regard to operation time expenditure and the occurrence of peri- and post-operative complications, were collected and compared between the two techniques. Operation time, peri- and post-operative complications. Mean operation duration was 61.7 minutes with LigaSure and 54.5 minutes with conventional suture ligature. The corresponding operative blood loss was 303 and 298mL, respectively. Occurrence of complications was few and not significantly different between the two techniques. Mean hospital stay was longer following LigaSure operations (10 vs 6 days), probably due to a certain age imbalance between the study groups. Within the limitation of this pilot study, they did not uncover a time sparing effect from the use of LigaSure or any difference in the occurrence of blood loss and complications.

As regard to early observation including blood loss, hospital stay, postoperative pain were the same regarding total abdominal hysterectomy and subtotal abdominal hysterectomy in the study of Gimbel, et al., [9] but they not use diathermy in their study, in addition to they follow up the patient for one year that not object in our study. As Gimbel, et al., [9] mentioned that; The aim of this study was to compare total and subtotal abdominal hysterectomy for benign indications, with regard to urinary incontinence, postoperative complications, quality of life, constipation, prolapse, satisfaction with sexual life, and pelvic pain at 1-year postoperative. Eighty women chose total and 105 women chose subtotal abdominal hysterectomy. No significant differences were found between the 2 operation methods in any of the outcome measures at 12 months. Fourteen women (15%) from the subtotal abdominal hysterectomy group experienced vaginal bleeding and three women had their cervix removed.

As regard to practice of total abdominal hysterectomy versus subtotal hysterectomy, Zekam, et al., [10] mentioned that; To estimate the attitudes and practice of gynecologists in the Washington, DC, Maryland, and Virginia area regarding total versus subtotal abdominal hysterectomy. A questionnaire with 18 questions on physicians' attitudes and practice regarding total versus subtotal hysterectomy was mailed to 1647 gynecologists in Washington, Maryland, and Virginia. The corrected response rate was 51.2%. Forty-five percent of respondents stated that they always removed the cervix. The most common reason cited was to eliminate the risk of cervical cancer. The most common reason for subtotal hysterectomy was surgical difficulty leading to an intraoperative change of procedure. Only 17.8% of respondents always counseled women regarding the advantages and disadvantages of both total and subtotal hysterectomy; 63% rarely or never did. Nineteen percent always offered women a choice between the procedures; 61% rarely or never did. Eighty-eight percent of respondents felt that the risk of cancer in the cervical stump was small or negligible. Gender of the physicians or year of completion of residency made no significant impact on patients being counseled about both procedures or being offered a choice between the two. Most gynecologists surveyed favour total abdominal hysterectomy over subtotal hysterectomy. Few counsel women regarding the options of total and subtotal hysterectomy or offer a choice between the procedures. Given that there are no convincing data proving the superiority of either procedure over the other, it may be reasonable to discuss the potential advantages and disadvantages of both procedures with women undergoing hysterectomy for benign disease and to offer them a choice.
As regard early follow-up and short term complication was similar to the study of Thakar et al. [11]. But they include also urinary, bowel, sexual follow-up that are not in our study, and did not include cervical cauter that was present in our study. Thakar, et al., [11] Mentioned that; It is uncertain whether subtotal abdominal hysterectomy results in better bladder, bowel, or sexual function than total abdominal hysterectomy. They conducted a randomized, double-blind trial comparing total and subtotal abdominal hysterectomy in 279 women referred for hysterectomy because of benign disease; most of the women were premenopausal. The main outcomes were measures of bladder, bowel, and sexual function at 12 months. They also evaluated postoperative complications. The rates of urinary frequency (urination more than seven times during the day) were 33 percent in the subtotal hysterectomy group and 31 percent in the total-hysterectomy group before surgery, and they fell to 24 percent and 20 percent, respectively, at 12 months ($p=0.03$ for the change over time within each group; $p=0.84$ for the interaction between the treatment assignment and time). The reduction in nocturia and stress incontinence and the improvement in bladder capacity were similar in the two groups. The frequency of bowel symptoms (as indicated by reported constipation and use of laxatives) and measures of sexual function (including the frequency of intercourse and orgasm and the rating of the sexual relationship with a partner) did not change significantly in either group after surgery. The women in the subtotal-hysterectomy group had a shorter hospital stay (5.2 days, vs. 6.0 in the total-hysterectomy group; $p=0.04$) and a lower rate of fever (6 percent vs. 19 percent, $p=0.001$). After subtotal abdominal hysterectomy, 7 percent of women had cyclical bleeding and 2 percent had cervical prolapse. Neither subtotal nor total abdominal hysterectomy adversely affects pelvic organ function at 12 months. Subtotal abdominal hysterectomy results in more rapid recovery and fewer short-term complications but infrequently causes cyclical bleeding or cervical prolapse.

As regards comparison of different modalities of hysterectomies, Mettler and Semm [12] mentioned that; Between 1993 and 1994, 368 women underwent hysterectomy for benign disorders at the University of Kiel. Of these operations, 58.7% were performed either by pelviscopic or by laparoscopic Classic Intrafascial Supracervical Hysterectomy, subtotal hysterectomy with coring of the inner cervix. Of the remainder, 14.8% were performed by total abdominal hysterectomy, 13.6% by Intrafascial Vaginal Hysterectomy, 12.2% by vaginal hysterectomy, and only 0.05% by Laparoscopic Assisted Vaginal Hysterectomy. Comparative data of these six surgical techniques concerning patients’ characteristics, indications for operation, histological features, blood loss, operating time, hospital stay, uterine weights and postoperatively used analgesics are described.

Conclusions:
Subtotal abdominal hysterectomy with thermal damage of endocervical canal was better than total abdominal hysterectomy for benign lesions in this study. But more evaluation is needed by more studies in larger group of patients to confirm the results.

References
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