Is Incidence of Hysterectomy Increased in Post Tubal Ligated Patients due to Dysfunctional Uterine Bleeding?

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Abstract

Background: To determine if previous bilateral tubal ligation (BTL) increases the risk of hysterectomy due to dysfunctional uterine bleeding (DUB).

Methods: In this case-control study female patients with bilateral tubal ligation, undergoing hysterectomy due to abnormal uterine bleeding were included. These patients were divided into two groups. Group A (study group) were those who had undergone BTL in past and group B (control group) were those not having history of tubal ligation. Hysterectomy was done in all these patients and demographic data including age, hemoglobin (Hb) level and parity were recorded. The incidence of hysterectomy in patients with DUB was compared in both groups. Frequencies and percentages were calculated for qualitative variables like number of patients undergoing hysterectomy in both groups using chi-square test. The Odd’s Risk (OR) and its 95% Confidence Interval (CI) was calculated and p-value ≤ 0.05 was considered as significant.

Results: A total of 313 patients underwent hysterectomy during this period. Among them, 89 patients were operated due to DUB. Of these 89 patients, 28 (31.4%) had history of BTL (Case group) while 61 (68.5) had no history of BTL (Control group). These groups were comparable to each other in terms of age, parity and Hemoglobin levels. Also statistical analysis showed that there was no association between BTL and hysterectomy due to DUB (OR=0.623; 95% CI: 0.41- 0.93).

Conclusion: Bilateral tubal ligation is not a risk factor for future hysterectomy in patients with history of bleeding of endometrial origin.

Key Words: Hysterectomy, Tubal Ligation, Sterilization

Introduction

Dysfunctional uterine bleeding (DUB) is defined as abnormal uterine bleeding in the absence of organic disease. Among many causes of DUB in adult patients, one important cause is tubal ligation. Bilateral tubal ligation (BTL) is a known and effective method of sterilization among women, particularly those undergoing cesarean section. But like any other surgical procedure, it has variable outcomes. The complications any woman has to face post-ligation are termed as Post-tubal ligation syndrome which include increased incidence of irregular and heavy menstrual bleeding and subsequent hysterectomies. Hysterectomy is among most commonly performed gynaecological procedures. Since a long time, this procedure is being performed for a variety of causes and pathologies including DUB, endometriosis, malignancies, leiomyomas and prolapse. It is second most commonly performed procedure among adult females after cesarean section (CS). Recently a question has been raised among researchers that whether this procedure is being done logically and judicially. According to Magon et al. hysterectomy is a surgery which has been used and misused, underused, and abused at different times in gynaecology. So it is important to search for risk factors of hysterectomy and it is topic of debate with various studies concluding contradictory results. Specifically focusing on BTL being a risk factor of hysterectomy, the relative risk of hysterectomy because of DUB subsequent to tubal sterilization is increased.

Patients and Methods

This case-control study was conducted at Department of Obstetrics and Gynaecology, Avicenna Medical College and Teaching Hospital, Lahore, over a period of two years from January, 2013 to December, 2014. All female patients undergoing hysterectomy due to abnormal uterine bleeding were included in the study. Other inclusion criteria were patients aged 38-50 years, multiparous and menstrual cycle shorter than 21 days. Exclusion criteria included: patients with history of abnormal uterine bleeding due to fibroid uterus, adenomyosis, endometrial polyp, patients with bleeding disorder; patients with medical disorders and those receiving hormonal therapy. All the patients
were worked up for the underlying cause of abnormal uterine bleeding and those undergoing hysterectomy only due to bleeding of endometrial origin or dysfunctional uterine bleeding were included. These patients were divided into two groups. Group A (study group) were those who had undergone BTL in past and Group B (control group) were those not having history of tubal ligation. Hysterectomy was done in all these patients and demographic data including age, hemoglobin (Hb) level and parity were recorded. The incidence of hysterectomy in patients with DUB was compared in both groups. Frequencies and percentages were calculated for qualitative variables like number of patients undergoing hysterectomy in both groups using chi-square test. The Odd’s Risk (OR) and its 95% Confidence Interval (CI) was calculated and p-value ≤ 0.05 was considered as significant.

Results

A total of 213 patients underwent hysterectomy during this duration at our department. Out of them, 89 patients had hysterectomy purely for the bleeding of endometrial origin. Among 89 patients 28 patients (31.46%) had previous history of BTL (Case group) while 61 (68.53%) women who had hysterectomy due to bleeding of endometrial origin had no history of BTL (Control group). Both groups were comparable to each other in terms of mean age, parity and Hb levels (Table 1).

Table 1: Demographic details of the patients in two groups

<table>
<thead>
<tr>
<th></th>
<th>Group A (Control group)</th>
<th>Group B (Study group)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Mean) In years</td>
<td>43.08 ± 5.26</td>
<td>45.5 ± 3.48</td>
<td>0.02</td>
</tr>
<tr>
<td>Parity</td>
<td>4.21 ± 1.59</td>
<td>4.25 ± 1.85</td>
<td>0.3</td>
</tr>
<tr>
<td>Hb (mg/dl)</td>
<td>8.38 ± 1.15</td>
<td>8.2 ± 1.4</td>
<td>0.20</td>
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The mean duration of hysterectomy after BTL was 15.30 ± 5.3 years. The mean onset of DUB was at 42.05 ± 2.3 years of age. Also statistical analysis showed that there was no association between BTL and hysterectomy due to DUB (OR=0.623; 95% CI: 0.41-0.93) (Table 2).

Discussion

Among women, many ways of contraception and sterilization are in practice and among surgical options, one is bilateral tubal ligation. It is a permanent type of contraception which blocks the passage of sperm cells through fallopian tubes. It can be done as part of cesarean section, as a separate procedure both open and laparoscopically and fallopian tubes can be closed with clips, rings, by electrocoagulation and excision. It is a highly effective way of contraception but at the same time, post-operative complications associated with this procedure are highly prevalent and termed as Post-tubal ligation syndrome. This term was proposed in 1951 and it is called a syndrome because it is a constellation of various symptoms including menorrhagia, pelvic discomfort and ovarian cystic changes. The pathophysiology behind these symptoms after BTL is disruption of blood supply to the ovaries and uterus with disturbance of ovulatory functions. Because of the reason of DUB being associated with this syndrome, some patients opt for hysterectomy and this was the objective of this study to find risk of hysterectomy in patients undergoing BTL. In this study we found that DUB was cause of hysterectomy in 89 of 213 patients (41.7%). DUB has been found as main cause of hysterectomy in many studies. Tiwana KK and colleagues found DUB as a cause of hysterectomy in more than 50% of the patients. Also many other studies have found DUB as a principal cause in most of the patients undergoing hysterectomy. However in our study it was in 41.7% patients. The reason of this relatively less number may be because in our study, we included all the patients undergoing hysterectomy including pathological and oncological causes unlike other referenced studies. Many authors have investigated and found contradictory reports regarding DUB being associated with BTL. As Peterson and colleagues conducted their trial and included 95 patients who underwent BTL and
they found that there were no persistent changes in inter-menstrual bleeding or the length of the menstrual cycle but these patients had more decrease in the number of days with bleeding. Bernard et al. found that length of menstruation, menstrual irregularity, length of cycle, flow volume, dysmenorrhea and hormone levels are similar in women with and without tubal ligation, but parous women with a history of CS and BTL more than 5 years of age experienced a marginal increase in volume of menstrual flow compared with women who did not undergo BTL. Also OR in this study was found to be 0.623 which shows a non-significant association between BTL and hysterectomy due to DUB, but this may be due to DUB, but still in their study BTL was not found having any association with hysterectomy. Similarly Moradan S and Gorbani R conducted a similar trial and they found relative risk of 0.85 in their study between BTL and hysterectomy. These findings are consistent with our study results. In another study Ozerkan et al. found that some kind of changes in menstrual pattern do happen in 7.6% of patients after BTL however these are mild changes.

**Conclusion**

There was no significant association between patients undergoing hysterectomy due to dysfunctional Uterine Bleeding (DUB) and previous surgery for Bilateral Tubal Ligation (BTL).

**References**