

Dysfunctional Uterine Bleeding-Association with Bilateral Tubal Ligation?

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Objective: To find an association between Dysfunctional uterine bleeding (DUB) and prior Bilateral tubal ligation (BTL). **Design:** Observational study. **Place and duration of study:** Unit II, Lady Willingdon Hospital, Lahore, from August to December 2006. **Patients and methods:** Fifty two patients between the ages of 35 to 46 with abnormal uterine bleeding (AUB) were studied. Exclusion criteria included intrauterine device (IUD), evidence of pregnancy, leiomyoma or ovarian pathology on sonography, uterine size of greater than 10 cm, medical disorders and hormonal therapy. All patients were worked up for underlying cause of AUB, assessed for BTL and divided in two groups. Group A of 27 patients with previous history of BTL and Group B of 25 patients without previous history of BTL. **Results:** In group A (with prior BTL), 22 patients (81%) had DUB as compared to 12 (48%) in group B (without prior BTL) and this difference was statistically significant ($p < 0.05$). **Conclusion:** In women undergoing diagnostic work up for AUB the likelihood of DUB being the underlying cause is greater if they have prior BTL.

Key words: Dysfunctional uterine bleeding. Abnormal uterine bleeding. Bilateral tubal ligation.

Abnormal uterine bleeding is one of the most frequent gynecologic problems. The diagnosis of dysfunctional uterine bleeding (DUB) is made in patients in whom there is no underlying physical lesion¹ to explain the symptoms. DUB can occur at any time between menarche and menopause in ovulatory or anovulatory cycles. Tubal ligation is the permanent method of family planning most commonly used². An increase risk of developing menstrual abnormalities following tubal ligation has been a subject of debate for decades³. Many authors have investigated the sequelae of female sterilization⁴. Increased premenstrual distress, heavier and more prolonged menstrual bleeding, and increased dysmenorrhea has been reported in many studies⁵. However, many recent investigators have not found significant changes, except in women who undergo sterilization between 20 and 29 years of age⁶. The aim of this study was to compare the occurrence of DUB in women with or without a prior history of tubal ligation.

Patients and methods

This observational cross sectional study has been carried out on 60 women at Unit II, Lady Willingdon hospital from Aug,06 to Dec,06 to determine the association of tubal ligation with DUB.

All women aged 35 to 46 presenting with menstrual irregularity were selected. Those who had intrauterine device (IUD), evidence of pregnancy, leiomyoma or ovarian pathology on sonography, uterine size of greater than 10cm, suffered from medical disorders or on hormonal therapy were excluded from the study. Inclusion criteria included menstrual interval shorter than 21 days (polymenorrhea), duration of flow more than 8 days (hypermenorrhea), patients self described history of heavy blood loss whether regular (menorrhagia) or irregular (menometrorrhagia). All patients were assessed for tubal ligation. All had their hemoglobin, random blood sugar

estimation and pelvic sonography done. A pre-designed study proforma was filled on each case. All patients underwent diagnostic curettage and histopathology report of endometrium obtained. Outcome measures were DUB (proliferative or secretory phase endometrium) or other pathologies (endometrial hyperplasia, endometrial carcinoma or small polyps not detectable on pelvic sonography, etc.). By applying chi-square test, p-value of χ^2 was calculated.

Results

A total of 60 consecutive patients who met inclusion criteria were enrolled in the study and were divided into the two groups. Five patients in group B were lost for follow up and three were found to be diabetic on investigations.

Among the study population, age, parity, duration of menstrual abnormality, type of menstrual abnormality and histologic finding were the variables analysed. 54% patients were 40 years of age and 80% of them were para5 and above, 88% patients had menstrual abnormality of less than 3 years duration, 55.8% were suffering from menometrorrhagia and 36.5% had histology report of proliferative endometrium.

Group A comprised of patients with previous BTL (n=27, 52%) while group B comprised those without BTL (n=25, 48%). Among the group A, 21 patients had Pomeroy's method of sterilization, 5 were ligated at the time of cesarean section and only 1 had laparoscopic BTL. Mean period elapsed since BTL was 10-13 years followed by 7-9 years.

In group A, 22 patients (81%) had DUB as compared to 12 (48%) in group B and this difference is statistically significant ($p < 0.05$) (Table). Total cases of DUB were 65% (n=34).

The most common histological findings in group A & B were both proliferative endometrium 44% & 24% and secretory endometrium 37% & 24% respectively.

Table : Association of DUB with BTL

DUB * BTL Cross tabulation

DUB	BTL		Total
	Group A	Group B	
Yes	22	12	34
No	5	13	18
Total	27	25	52

Test Statistics	DUB	BTL
	Chi-Square(a)	4.923
Df	1	1
Asymp. Sig.	.027	.782

Discussion

Voluntary surgical contraception is practiced widely in developing countries like Pakistan. More than 65% of women undergoing bilateral tubal ligation (BTL) are above 30 years of age². Although sterilization procedures have been hypothesized to cause post-tubal ligation syndrome³, the evidence does not favour the existence of any such syndrome^{5,6}. Menstrual abnormalities are as common among sterilized as in non-sterilized women but still sterilized women are more likely than nonsterilized women to undergo hysterectomy⁷. Moreover the risk of subsequent hospitalization for menstrual disorders also appears to increase in sterilized women⁸. It is also observed that sterilization at younger ages seem to have more effect on menstrual irregularities and risk of hysterectomy than that at older ages⁴. In this study it is found that in women under going diagnostic workup for abnormal uterine bleeding, the likelihood of DUB being the underlying cause is more in sterilized than in non-sterilized women. The exact biological explanation for such an observation is obscured by poorly defined underlying lesion in DUB. Disturbances of hypothalamic-pituitary-ovarian axis activity and hormone imbalance is often implicated in the etiology of DUB⁹ but studies show no significant change in ovarian hormone levels before and after tubal sterilization¹⁰. However there is a significant elevation of FSH (follicle stimulating hormone) levels after ligation¹¹. Moreover these patients may acquire an ovarian polycystic appearance and increased ovarian pulsatility index post ligation¹². Higher levels of estrogen and progesterone receptors expression is found in endometria of patients with DUB¹³ but whether this expression is even higher in sterilized women is still unclear. Other morphological abnormalities like vascular alterations, impaired

vasoconstriction, fibrinolysis¹⁴ and disturbances of angiogenic process¹⁵ are also yet to be studied in this context. A prospective study on a larger number of cases may substantiate the hypothesis.

Conclusion

Women who undergo diagnostic workup for abnormal uterine bleeding between 35 to 46 years of age are more likely to suffer from DUB if they have prior BTL irrespective of type of sterilization method and period since ligation.

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