

Correlative Study of Post Sterilization Menstrual Disorders and Hysterectomy

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Summary

The study analyses 200 cases of hysterectomies ; 100 cases as study group with a prior history of tubal sterilization and similar number of nonsterilized group undergoing hysterectomy as control.

Eighty one percent cases in sterilized and 59% cases in non-sterilized group had menstrual disturbances. Dysmenorrhoea was present in 14 (17.3%) cases in sterilized group as compared to 8 (13.5%) in nonsterilized group. Chronic pelvic pain 27% was present in sterilized group as against 11% in nonsterilized group. The mean sterilization – hysterectomy interval was seen to be 10.7 ± 5.1 years.

The poststerilized women undergoing hysterectomy have different clinical and pathological characteristics than nonsterilized women and that tubal sterilization could have contributed to the subsequent risk of hysterectomy.

Introduction

Tubal sterilization has been accepted as an important and popular method of fertility control amongst the couples whose families are complete. It is the most widely used contraceptive method in the world (Green 1978). Increased prevalence of menstrual disturbances after sterilization is a controversial issue (Neil et al, 1975; Bhiwandiwala 1983; Rulin et al 1993). Not very infrequently, patients with previous history of tubal sterilization consult the Gynecologist for various menstrual symptoms and may need hysterectomy. Muldoon (1972) had reported that the incidence of subsequent major gynecological surgery is as high as 25% in women with prior history of tubal sterilization.

The study was undertaken to find out the detailed clinical and pathological aspects of women undergoing hysterectomy with prior history of tubal

sterilization, to correlate the menstrual disturbances, and to know whether the menstrual disturbances in women were related to prior tubal sterilization or not.

Material and Methods

The present study was carried out in the Department of Obstetrics and Gynecology and Pathology of Mahatma Gandhi Institute of Medical Sciences, Sevagram during the period from April 1998 to March 2000. The study analyses 200 cases of hysterectomies; 100 cases as study group with a prior history of tubal sterilization and similar number of nonsterilized group undergoing hysterectomy as control. Exclusion criteria were cases with gynecological malignancies, ovarian endometriosis, recent use of hormones and menstrual disorders prior to sterilization.

Following hysterectomy the specimen of uterus

and adnexae were submitted to the Department of Pathology in 10% formalin solution for pathological study.

Observations

Analysis of age group in these cases had shown that there were 51% in sterilized and 26% in non-sterilized groups, were in between the age group of 36-40 years. The mean age was 40.0 ± 7.6 years and 44.0 ± 7.5 years in sterilized and non-sterilized group respectively (Table I).

Table I
Parity Distribution in Sterilized and Nonsterilized Groups

Parity	Sterilized	Nonsterilized
P1	1	12
P2 - 4	78	63
>4	21	25
Total	100	100

Table II
Distribution of various menstrual disturbances in Sterilized and Nonsterilized Groups

Menstrual Disturbances	Sterilized	Nonsterilized
Menorrhagia	32 (39.5)	15 (25.4)
Polymenorrhoea	8 (9.9)	6 (10.2)
Dysmenorrhoea	14 (17.3)	8 (13.5)
Continuous Bleeding	18 (22.2)	15 (25.4)
Irregular Bleeding	9 (11.1)	15 (25.4)
Total	81 (100)	59 (100)

Eighty one percent cases in sterilized and 59% cases in non-sterilized group had menstrual disturbances. This high incidence of menstrual disturbance in sterilized group was statistically significant ($p < 0.05$) (Table II). Analysis of the type of menstrual disturbances shows that in 32 (39.5%) in

sterilized group had menorrhagia as compared to 15 (25.4%) in nonsterilized group. On statistical analysis this high incidence of menorrhagia in sterilized group was found to be significant ($p < 0.05$). Dysmenorrhoea was present in 14 (17.3%) cases in sterilized as compared to 8 (13.5%) cases in non-sterilized group ($p < 0.05$). Chronic pelvic pain was found in a statistical significant number of cases in sterilized 27 (66.7%) as compared to nonsterilized 11 (45.47%) subjects. Endometrium was in proliferative phase in 40% in sterilized group as compared to 49% in non-sterilized group ($P < 0.05$). Dysfunctional uterine bleeding was present in 19% in sterilized group as compared to 10% in nonsterilized group ($p < 0.05$). (Table III). Intervals between sterilization and hysterectomy shown in Table IV. The mean sterilization - hysterectomy interval was 10.7 ± 5.1 years.

Table IV: Sterilization - Hysterectomy interval

Sterilization - Hysterectomy intervals in Years	Number
<4	2
4 - 7	4
8 - 10	37
11 - 13	11
14 - 16	17
> 17	29
Total	100

Leiomyoma of the uterus was the most common diagnosis in both groups. Diagnosis of DUB was made in a statistically significant more number of cases in sterilized (19%) as compared to non-sterilized (10%) group ($p < 0.05$) (Table V). Amongst DUB cases tubal pathology was significantly high in sterilized (79%) group as compared to non-sterilized (30%) group ($P < 0.01$). A significant number of sterilized cases (66.7%) of chronic pelvic pain had inflammation of the tube.

Discussion

In the present study evaluation revealed that

Table III: Endometrial Histopathology in Sterilized and Non-Sterilized Groups

Endometrial histopathology report	Sterilized	Nonsterilized
Phase of Endometrium		
Proliferative	40	49
Secretory	4	6
Pathological Changes		
Anovulatory	16	11
DUB	19	10
Polyp	8	10
Atrophy	11	13
Adenomatous Hyperplasia	2	1
Total	100	100

Table V
Final Diagnosis in Sterilized and Nonsterilized Groups

Diagnosis	Sterilized	Nonsterilized
Leiomyoma	27	34
Adenomyosis	21	29
Adenomyosis with leiomyoma	12	14
Dysfunctional uterine bleeding	19	10
PID with adenomyosis	19	11
PID with leiomyoma	2	1
Inversion	-	1
Total	100	100

99% cases in sterilized and 88% in non-sterilized group were multiparous (Table I). Rulin et al (1993) found a mean parity of 2.87 and 2.45 in sterilized and non-sterilized groups respectively which is more or less similar to that in the present study.

Menstrual disturbances were found in a statistically significant larger number of sterilized patients ($p < 0.05$). The occurrence of menorrhagia was significantly more amongst the sterilized group (Table II). The high incidence of menorrhagia amongst sterilized cases has been observed by various workers (Radwanska et al, 1979; Gupta et al, 1981; Hillis et al, 1998). Gupta et al (1981) reported a higher incidence of menorrhagia in 69% cases in sterilized as compared to 34% in non-sterilized cases in their study. Endometrial study on histopathological aspect is depicted on Table III. Various studies have demonstrated luteal phase deficiency to account for menorrhagia (Radwanska 1979). Darwish and Saafan in 1975 stated no relationship of menorrhagia to tubal ligation as it does not interfere with utero-ovarian anastomosis. Therefore, assumption that the luteolytic substance fails to reach the distorting ovary, hence the ovarian steroidogenesis is disturbed. They offered a logical explanation stating that subconscious psychological or emotional factors affect the menses. These factors act through the autonomic nervous system and via hypothalmo-hypophyseal axis to cause ovarian dysfunction, which leads to menstrual irregularity. The cause of menorrhagia remains a controversy inspite of extensive research. But, we believe in the current popular explanation for this phenomenon which expresses that the uterotubal circulation is impaired by tubal sterilization causing engorgement of the venous circulation of the uterus subsequently leading to menorrhagia (Gupta et al 1981, Radwanska et al 1982, Hillis et al 1998).

Chronic pelvic pain was found in a statistically

significant number of cases (27%). A significant number of sterilized cases (66.7%) who had chronic pelvic pain showed inflammation of the fallopian tube. There is increased risk of pelvic pain following sterilization, probably due to formation of hydrosalpinx and adhesions. It is reported that pelvic infection or other inflammatory reactions may result in scarring of the fimbriated end of the fallopian tube (Russian 1986).

Conclusions

The poststerilized women undergoing hysterectomy have different clinical and pathological characteristics than nonsterilized women and that tubal sterilization could have contributed to the subsequent risk of hysterectomy.

References

1. Bhiwandiwalla PP, Mumford SD, Feldblum PJ: *Am J Obstet & Gynecol* 145:684, 1983
2. Green CP: *Population reports. Special topics, Monograph no 2*, 1978.
3. Darwish DH & Saafan STA: *Lancet*; 2:975, 1975.
4. Gupta AS, Saha M and Pramanik A: *JIMA*, 76: 208, 1981.
5. Hillis SD, Marchbanks PA, Tylor I R and Perterson HB: *Obst Gynecol*, 91; 241, 1998.
6. Muldoon MJ: *Br. Med. J*; 1, 84, 1972
7. Neil JR, Noble AD, Hammond GI, Rushton, I and Letchworth AT: *Lancet* 2:699, 1975.
8. Radwanska E, Berger GS and Hammond J: *Obstet Gynecol*; 54; 189, 1979.
9. Radwanska E, Headley SK and Dmowski P.: *J Reprod Med*. 27:376, 1982
10. Rulin MC, Davidson AR, Philliber SG, Graves WI & Cushman LF: *Obstet Gynecol*, 82:118, 1993
11. Russian I.D: *Radiology*, 159: 115-1986.