

## SOME OBSERVATIONS ON THE HAZARDS OF FEMALE STERILIZATION

by

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Sterilization in female is a very effective fertility termination procedure and is fairly popular in India as it affords complete safety from unwanted pregnancy. Although sterilization is usually associated with very few complications, the delayed consequence of sterilization in young women is becoming more frequent.

The analysis gives the record of hysterectomies carried out for dysfunctional uterine haemorrhage following tubectomy operations. During the period from January, 1974 to December, 1978, 350 hysterectomies have been done for dysfunctional uterine haemorrhage some years after the sterilization operation.

A high percentage of individuals subjected to tubal interruption for purpose of sterilization subsequently developed pelvic abnormality, the most frequent being abnormal uterine bleeding.

There is increase in the number of post-sterilization menstrual irregularity in between 1974 to 1978 as compared to that of 1961-1965. The post-sterilization

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TABLE I  
*Incidence of Dysfunctional Uterine Bleeding  
Due to Sterilization at Different Periods*

	Numbers	
	1974-78	1961-65
Dysfunctional uterine haemorrhage due to sterilization	350 (35%)	110 (17.2%)
Dysfunctional uterine haemorrhage due to other causes	632 (65%)	530 (82.8%)

abnormal bleeding is 35% in all the cases of dysfunctional uterine bleeding between 1974-1978, while it is only 17.2% in all the cases of dysfunction uterine bleeding between 1961-1965. With the increase in the number of sterilization the ratio of post-sterilization abnormal bleeding is increased.

The majority of menstrual abnormalities started within 2-4 years.

These cases are from the group of post-partum sterilization. The next major group is from sterilization of cases who had M.T.P. with vaginal sterilization.

The majority of cases are from the group who had bilateral salpingectomy, either by abdominal or vaginal route.

TABLE II  
*Age Incidence of Dysfunctional Uterine Bleeding in Post-sterilization and in Other Cases*

	Total No. of cases	Age groups in years		
		25-35	35-40	40-45
Dysfunctional uterine bleeding due to sterilization	350	184 (52.6%)	132 (37.6%)	34 (9.8%)
Dysfunctional uterine bleeding due to other causes	632	120 (19.0%)	325 (51.4%)	187 (29.6%)

TABLE III  
*Interval Between the Sterilization and Dysfunctional Uterine Bleeding in 350 cases*

Intervals in years	No. of cases	Percentage
1-2	42	12.0
2-3	106	30.3
3-4	100	28.6
4-5	34	9.8
5-6	36	10.2
6-7	18	5.1
7-8	14	4.0
Total	350	100.0

Irregular excessive bleeding and menorrhagia are the main symptoms of post-sterilization.

The highest incidence of genital tract abnormality was in the form of enlarged uterus with congestion of the adenexa and flimsy adhesions round the traumatised part of the tube.

Corpus luteum is present in the large group of cases. The endometrium has either deficient secretory changes or poorly developed secretory changes with inflammatory cells. Proliferative endome-

TABLE IV  
*Types of Sterilization Done in 350 Cases of Dysfunctional Uterine Bleeding*

Types of sterilization	No. of cases	Percentage
Interval abdominal sterilization	36	10.2
Post-partum abdominal sterilization	104	29.6
Interval vaginal sterilization	64	18.3
Hysterotomy and sterilization	45	12.9
M.T.P. & sterilization	35	10.0
M.T.P. & vaginal sterilization	66	19.0
Total	350	100.0

TABLE V  
*Technique of Sterilization as Noted During Laparotomy*

Sterilization technique	No. of cases	Percentage
Bilateral salpingectomy	186	53.1
Pommeroy's technique (Both abdominal & vaginal)	56	16.0
Modified Pommeroy's technique (Both abdominal & vaginal)	108	30.9
Total	350	100

TABLE VI

*Symptomatology in 350 Cases of Post-sterilization Dysfunctional Uterine Bleeding*

Symptomatology	No. of cases	Percentage
Menorrhagia	106	30.3
Irregular excessive bleeding and metrorrhagia	122	34.9
Dysmenorrhoea	68	19.4
Oligomenorrhoea	54	15.4
Total	350	100.0

TABLE VII

*Operative Diagnosis in 350 Cases of Post-sterilization Dysfunctional Uterine Bleeding*

Operative diagnosis	No. of cases	Percentage
Enlarged uterus with mild adhesion to the surrounding structures	100	28.7
Pelvic inflammatory diseases	62	17.7
Endometriosis	10	2.8
Pelvic congestion with enlarged uterus	82	23.4
Fibromyoma of uterus (4-6 weeks)	4	1.1
Bilateral cystic ovaries in tubo-ovarian lump near the ligated tubes	92	26.3
Total	350	100.0

TABLE VIII

*Endometrial Changes in 350 Cases of Post-sterilization Dysfunctional Uterine Bleeding*

Endometrial changes	No. of cases	Percentage
(1) Proliferative endometrium	102	29.2
(2) Proliferative endometrium with some dilated glands round cell infiltration	64	18.3
(3) Secretory endometrium	88	25.2
(4) Scanty secretory endometrium with inflammatory cells	32	9.0
(5) Deficient secretory endometrium	64	18.3
Total	350	100.0

TABLE IX

*Ovarian Changes in 350 Cases of Post-sterilization Dysfunctional Uterine Bleeding*

Ovarian changes	No. of cases	Percentage
Corpus luteum	106	30.3
Haemorrhagic corpus luteum cysts	72	20.6
Degenerated corpus luteum	16	4.5
Maturing follicles and corpus albicans	28	8.0
Atretic multiple follicles	65	18.6
Multiple follicular cysts	63	18.0
Total	350	100.0

TABLE X  
Correlation of Endometrial Pattern and Ovarian Changes

Endometrial pattern	OVARIAN CHANGES						Total
	Corpus luteum	Haemorrhagic corpus luteum cyst	Degenerated corpus luteum	Maturing follicles & corpus albicans	Atretic multiple follicles	Multiple follicular cyst.	
Proliferative endometrium	—	—	10	—	30	62	102
Proliferative endometrium with some dilated gland round cell infiltration	—	—	3	25	35	1	64
Secretory endometrium	74	14	—	—	—	—	88
Scanty secretory endometrium with inflammatory cells	20	6	3	3	—	—	32
Deficient secretory endometrium	12	52	—	—	—	—	64
Total	106	72	16	28	65	63	350

TABLE XI  
Ovarian Changes

	OVARIAN CHANGES						Total
	Corpus luteum	Haemorrhagic corpus luteum cyst	Degenerated corpus luteum	Maturing follicles & corpus albicans	Atretic multiple follicles	Multiple follicular cyst	
Menorrhagia	64	30	6	6	—	—	106
Continuous bleeding and Metrorrhagia	2	8	10	12	34	56	122
Dysmenorrhoea	32	6	—	—	30	—	68
Oligomenorrhoea	106	72	16	28	65	63	350

trium associated with multiple follicles is present in one third of the cases.

#### *Discussion*

The data presented above suggests that individuals who are the subject of sterilization procedure later developed higher percentage of abnormal uterine bleeding that would be expected in a comparable number of unselected women. It suggests that the sterilization brings about menstrual abnormality due to disturbance of the function of the ovary or uterus or both. This complication is noted most frequently in those cases where sterilization is performed by salpingectomy after the childbirth or termination of pregnancy. The ovaries remain perhaps, most vulnerable after the childbirth or during pregnancy. Any interference in the blood supply during that period brings forth more abnormality.

According to the statistics presented it is evident that abnormal bleeding was due to the ovarian dysfunction perhaps, caused by defective steroidogenesis. The defective steroidogenesis is more evident in those cases where maximum interference in the blood supply to the ovary and the uterus is expected i.e. bilateral salpingectomy done by abdominal or vaginal route.

There is interference of steroidogenesis even in those cases where simple ligation has been done, particularly near the ampullary end. It is expected that with progressive improvement in devising the techniques for tubal interruption we may be able to find out a method of tubal blockage by intrauterine technique. The bilateral ligation could be done by ligating at the ampullary isthmic junction where there is minimum number of vascular arcades or second laparotomy can be avoided with judicious use of hysterectomy in selected cases.

At present, we feel that with the im-

provement in operative techniques and pre-operative and post-operative care of the surgical patients has resulted in a marked reduction of both morbidity and mortality in patients subject to abdominal hysterectomy. The majority of the individuals who are candidates for sterilization procedure possess normal pelvic anatomy, the presence of which should bring the hysterectomy morbidity and mortality to a minimum. It is felt that in the hands of a competent pelvic surgeon there should be little addition hazard in the performance of hysterectomy rather than tubal interruption, once the patient is anaesthetised and the abdomen is opened particularly in older patients after the age group of 30 years.

#### *Summary*

This study gives the analysis of 350 cases of poststerilization dysfunctional uterine bleeding. The bleeding appeared within 1-4 weeks of operation. The maximum incidence of bleeding occurred in cases who had either post-partum abdominal sterilization or M.T.P. with vaginal sterilization.

The menstrual irregularity was in the form of menorrhagia (30.3%), Irregular excessive bleeding and metrorrhagia (34.9%), dysmenorrhoea (19.4%) and oligomenorrhoea (15.4%).

The endometrial changes were proliferative endometrium (29.2%), proliferative endometrium with some dilated glands and round cell infiltration (18.3%), secretory endometrium (25.2%), deficient secretory endometrium (18.3%) and scanty secretory endometrium with inflammatory cell (9.0%).

The ovarian changes are corpus luteum (30.3%), haemorrhagic corpus luteum cyst (20.6%), degenerated corpus luteum (4.5%), maturing follicles (8.0%), atretic multiple follicles (18.6%), and multiple follicular cysts (18.0%).