A LONG TERM FOLLOW UP STUDY OF 923 CASES OF TUBAL LIGATION

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Introduction

In the last decade there has been a considerable increase in demand of female sterilisation due to its reliability as a method of contraception, its relative simplicity, and its freedom from side effects. Despite these advantages that many reports have indicated that there is a high incidence of subsequent pelvic disease, usually disorders of menstruation following tubal ligation (Sacks and Lacroix, 1962, Chakravarty 1966 and Rakshit 1966). The factors responsible for complication is that many young women who complete the family by age of 25 years or even less are requesting sterilisation, especially in our country. However, some doubt exists, particularly in the lay mind about some disturbance in the sexual, psychological and menstrual function in the operated female. It is therefore very important to study the sequlae of sterilisation and hence the present study has been undertaken.

Material and Methods

A follow up study of 923 cases of tubal ligation who came to gynaecological OPD of J.L.N. Hospital for check up, 6 months to 10 years after operation for any problem has been studied. A detailed history was taken regarding the type of sterilisation, present complaints, change in menstrual pattern if any, abdominal pain, state of health, psychological disturbances and marital relationship was studied. A detailed physical examination including systemic and pelvic examination was made. The type of treatment given and operative interference done if any was also noted.

Observations

Indications for sterilisation: Grand-multiparity was the commonest indication in 601 (65.11%), poor socioeconomic state in 300 (32.50%) and for medical diseases in 22 (2.39%) cases.

General Data

Age: The average age for sterilisation was 26.95 years. In 395 (42.79%) the age was between 26 to 30 years, in 198 (21.45%) 20 to 25, in 39 (4.22%) above 40 and rest were between 31 to 39 years.

Parity: The average parity was 3.89 years. Ninety-two (74.97%) had 3 to 5 children, 74 (8.01%), 2 living children and 157 (17.02%) had 6 or more living children.

Type of tubal ligation: It is shown in Table I.

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TABLE I
Type of Tubal Ligation

Type	Abdominal No. of cases	%	Vaginal No. of cases	%
Puerperal	616	66.73	133	14.40
Interval	91	9.85	17	1.84
With MTP	29	3.14		
With hysterotomy	12	1.30		
With caesarean section	18	1.95		
With abortion			7	0.75
Total	766		157	

Failure of sterilisation: In 9 (0.97%) cases there was failure of the procedure as they came with pregnancy and MTP was done. The cause of failure was recanalisation or formation of tubo-peritoneal fistulae in 8 cases and ligation of round ligament in 1 case.

General health: The general state of health in 632 (68.47%) cases remained same, in 173 (18.74%) health improved and in 118 (12.78%) deterioration in health was noted after operation. The cause was menstrual problems or regret to operation.

Body weight: Of the 923 cases, in 652 (70.63%) no significant change in weight was noted, 132 (14.30%) had put on weight, 4 (0.43%) became obese and in 135 (1.62%) there was decrease in weight. The cause of obesity was menopause in 2 cases. The cause of decrease in weight was due to menstrual problems in 80 cases and regret for operation in 5 cases. The cause of regret was due to minor ailments after operation in 2 cases and death of children in 3 cases.

Complaints

Of the 923 cases, 574 (62.18%) presented with single complaints, 323 (34.99%) had multiple complaints and 26 (2.81%) had no complaints. Sixteen came for check up and 10 came for recanalisation. The main problems were menstrual irregularity in 302 (32.71%), leucorrhea in 163 (17.65%), abdominal and pelvic pain in 184 (19.93%) and backache in 132 (14.30%) cases. Rest of the 142 (15.41%) cases had vague complaints in the form of general weakness, headache and breathlessness.

Clinical findings

The different clinical findings and pelvic pathology are shown in Table II. Hydrosalpinges or peritubal adhesions were suspected on clinical evidence of thickening in the fornices and small tender masses with slight fixity of uterus in 77 (8.34%) cases. Of these 1 case was of ovarian abscess which needed major surgery and developed within six months of vaginal sterilisation. Rest of the cases responded to anti-inflammatory treatment.

Patient reaction to operation

Psychological effects: In the present series, 99 (10.00%) cases had some psychological effects in the form of depression in 35, irritability 17, improved memory 8, conversion reaction 2 and only improvement in tempor in 1 case. The causes of these disturbances were menstrual irregularity, death of the child, weekness and strain of household work.

Marital relationship: There were no change in marital relation in 820 (88.00%), increased libido in 19 (2.0%) and loss of libido in 84 (9.00%) cases. The cause of increased libido was given as loss of fear of pregnancy. Loss of libido was due to dysparunia in 30 (3.00%) cases. The cause of dyspareunia was pelvic inflammation in 10 cases, vaginitis in 4, scarring

TABLE II
Clinical Findings and Pelvic Pathology

Clinical findings	No. of cases	Percentage
Erosion cervix	116	12.56
Chronic pelvic inflammation	77	8.34
T.O. mass 10		
Thickening and tender fxs. 59		
Fixed and tender uterus 7		
Ovarian abscess		
Vaginitis	55	5.95
Fibroid uterus	9	0.94
Normal size uterus in DUB	247	26.76
Cystic ovary	9	0.94
Uterovaginal prolapse	17	1.84
Scarring of vagina	4	0.43
Vulvitis	3	0.32
Mucous polyp	3	0.32
Leukoplaki vulva	1	0.10
Scar endometriosis	2	0.21
Complete perineal tear	1	0.10
Incisional hernia	4	0.43
Colitis	9	0.97
Arthritis	1	0.10
No clinical findings	365	39.54

of vagina in 3 and retroverted fixed uterus in 2 cases and in the rest of the cases no cause could be detected.

Satisfaction or regret to operation: Of the cases studied 840 (91.00%) were satisfied with operation and 83 (9.00%) regretted after operation. The cause of regret was illhealth after operation in 20, death of children after operation in 10, desire to have more children in 4, menstrual irregularities in 30, failure of operation in 9 and 10 wanted recanalisation. Of the 83 cases 20 felt that their minor ailments were due to sterilisation.

The operative interference in the present series is shown in Table III.

TABLE III
Operative Procedures Undertaken in the Present Study

Operation	No. of cases	Percentage
Hysterectomy (abdominal 20, vaginal 9)	29	3.14
Manchester repair	4	0.43
Anterior colporrhaphy	2	0.21
Complete perineal tear repair	1	0.10
Dilatation and Curettage	90	9.75
Cautery to cervix	31	3.35
Trachelorrhaphy	1	0.10
Removal of ovarian abscess	1	0.10
Excision of scar endometriosis	2	0.21
Dilatation of haematometra	1	0.10

Discussion

Menstrual disturbances developing at an earlier age after sterilisation can be regarded as a sequlae of operation. In the present series, the age of onset of menstrual disturbances was between 25 to 35 years which is earlier than in nonsterilised women, the average age being 31.76.

In the present series, the menstrual irregularity developed within 5 years of ligation and only 11% were premenopausal. Sacks and Lacroix (1962) noted that most of the menstrual disturbances occurred within 5 years of ligation, 28% of the cases who had undergone surgery were 36 to 45 years when functional disturbances are common.

In the present series, 302 (32.71%) had menstrual disturbances in the form of menorrhagia, polymenorrhea and irregular bleeding and 13 had undergone hysterectomy. Only 1 case showed improvement of menorrhagia after sterilisation. Dysmenorrhea developed in 31 (3.35%) cases after sterilisation. In Lu and Chun (1967) series only 51.8% had some menstrual disturbances and only 4 cases required hysterectomy. Of these cases 319 (30.00%) were in premenopausal age group of 35 to 45 years. In Tappan (1973) series the incidences of menstrual irregularity was 9.0%, menorrhagia 40.7% and dysmenorrhea 20.8%. Whitehouse (1971) noted menstrual disturbances in 45%, Muldoon (1973) in 55.55%. Neil *et al* (1975) noted increased menstrual loss in 39% cases with diathermy Laparoscopy and 22% with tubal ligation. The great frequency of problem in laparoscopic procedure might have been the result of increased destruction of tissue and disruption of blood supply.

In the present series, mild pain or vague abdominal discomfort without any pelvic findings was present in 184 (19.93%) cases. The causes of abdominal pain were colitis in 22, pelvic inflammation 77, dyspepsia 22, occasional pain over scar in 12 and manifestation of psycological effects of operation in 51 cases. Lu and Chun (1967) reported pelvic and abdominal pain in 20% while Tappan (1973) reported it in 33.3% cases.

In the present series, pelvic inflamation was present in 77 (8.34%) cases, and of these 1 had ovarian abscess and needed major surgery. In Lu and Chun (1967) series hydrosalpinges or peritubal adhesions were suspected on clinical evidence of thickening and small tender masses with slight fixitity in 62 (5.9%) cases and none required operative treatment. It is possible that a latent infection might have been flared up after operation or blood vessels might have been damaged during ligaturing causing haematoma formation and infection.

In the present series, the marital relations were not affected in 820 (88.00%) cases. Lu and Chun (1967) noted no change in marital relations in 861 (81.60%), increased libido in 18 (1.00%) and decreased libido in 176 (16.00%) cases. Tappan (1973) noted increased marital satisfaction in 33.5% and decreased in 7.0%. Baggish *et al* (1979) noted improved sex relation in 39%, in 41.5% there was no change and 12.7% reported deterioration. Whitehouse (1971) reported deterioration in marital life in 25% while Neil *et al* (1975) reported deterioration in marital life in 50% cases. The increased libido can be explained due to elimination of fear of pregnancy.

In the present series, 90.00% of the cases felt that their tempor, memory and fitness were the same as before operation and 10.00% had some psycological effects. In Lu and Chun (1967) series tempor in 664 (62.9%) remained same, in 318

tempor became worse, in 573 (6.90%) it became better after sterilisation. Memory in 573 (54.3%) remained unchanged, in 478 (45.3%) memory became worse and 4 had improvement in memory. Fitness or general sense of well-being in 720 (68.8%) was unchanged 293 (27.8%) felt less fit, while 42 (4.0%) felt more fit than before sterilisation.

In the present series, of the 923 cases who came for check-up 439 (47.56%) required some gynacological treatment and 162 (17.55%) needed some surgery and hysterectomy was required in 29 (3.14%) cases. The main indication for hysterectomy was dysfunctional uterine bleeding in 13, adenomyosis 3, fibroid uterus in 5 and utero-vaginal prolapse in 8 cases. Dilatation and curettage was required in 90 (9.75%) cases and the main indication was dysfunctional uterine bleeding, cautry to cervical erosion was done in 31 (3.35%) cases. In Muldoon (1972) series of 374 cases 162 (43.00%) required subsequent gynaecological treatment, 25% required major surgery, hysterectomy was performed in 70 (18.7%) and in 92 (6.4%) D & C was done. The main indication for hysterectomy was menorrhagia in 13.1%, fibroid uterus 0.8%, endometriosis 8.5%, adenomyosis 0.5%, Pelvic inflamatory disease 1.3% cancer cervix 1.3% vaginal hysterectomy and repair in 0.8% cases.

Hence to prevent menstrual disturbances sterilisation in early twenties should be avoided. In highly parous women requiring sterilisation and who had previous menstrual disorders even before a present pregnancy might well be treated by hysterectomy at a later stage. The psycological disturbances can be prevented by proper selection of cases and by proper follow up.

Summary

A long term follow up of 923 cases of sterilisation has been done. Single complaint was present in 62.18% cases and multiple in 34.99%. The main problems were menstrual in 32.71%, leucorrhaea in 17.65%, abdominal and pelvic pain 19.93% and backache in 14.30%. In 0.97% cases there was failure of sterilisation. The menstrual problems appeared at the age of 25 to 35 years. Pelvic inflamation was present in 8.34% cases. Psycological disturbances were present in 10.00% cases. No change in marital relations were noted in 88.00% cases and only in 9.00% cases loss of libido was present. The women who were satisfied by operation were 91.00% and 9% regretted for operation being done. Gynaecological surgery was needed in 162 (17.55%) cases and in 3.14% hysterectomy was done.

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