

THE LATE SEQUELAE OF TUBE LIGATION OPERATION—THE TUBAL LIGATION SYNDROME—A NEW CONCEPT

by

A. CHITTI BABU

Introduction

The aim of this paper is to study some aspects of late sequelae of tube ligation operation, for their better understanding and management.

Some women after tube ligation operation complain of gynaec symptoms and on examination the attending physician finds little or no signs of the disease, and hence often reassures them, that there is nothing wrong physically. Often these symptoms may be a passing initial stage in the evolution of the disease process.

This paper also emphasises pelvic tenderness elicited during vaginal examination as an important sign in understanding patients complaints.

A social and preventive approach is adopted to study the problem.

Material and methods with observations

In the present paper 787 tube ligated cases serially recorded between 15 to 50 years age group, attending the out patient recorded in a pre planned proforma. They are tabulated and studied for three main gynaec complaints of menstrual changes, vaginal discharge and pelvic pain. Combination of two or more of the above symptoms and occurrence of hysterectomy are also separately recorded. Physical examination findings including vaginal examina-

tion and the results of routine laboratory investigations are taken into consideration for positive recording and to exclude extra genital and systemic causes for the gynaec complaints.

Table I records frequency distribution and duration of tube ligation (follow up).

Table II shows symptom-free interval after tube-ligation who developed late sequelae. Out of 787 cases 491 showed late sequelae which includes cases who had hysterectomy.

Table III records the frequency of gynaec complaints, positive physical examination findings and hysterectomy.

Table IV shows the type of well defined gynaecological illness noted in 491 cases of tube ligations (in 105 cases. (cases with previous hysterectomy where the diagnosis is not known are not recorded)

TABLE IV

Gynaecological Illness Noted in 491 Tube-ligated Patients With Late Gynaecological Sequelae, (Hysterectomies Previously Done Where Diagnosis is Not Known are Not Included), on Clinical Examination

Nature of pathology	No. of cases
1. Bulky Uterus of Myomas	17
2. Tube Ovarian mass felt per vagina	9
3. Endometriosis	1
4. Carcinoma cervix	5
5. Prolapse Uterus and pelvic relaxation	7
6. Cervical erosion	66
Total	105

From: Jai Lakshmi Nursing Home, Nidubrolu, Guntur (dt) A.P. (India).

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TABLE I

Age Wise Distribution With Follow up Periods in 787 Tube Ligations Serially Recorded

Age group in years	1 year or below	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year	10 year	11 year	12 year	13 year or more	Total No. of cases in each group
15 to 17	1	0	0	0	0	0	0	0	0	0	0	0	0	1
18 to 20	22	13	23	13	7	1	0	0	0	0	0	0	0	79
21 to 23	14	15	17	10	5	5	2	3	1	0	0	1	0	73
24 to 26	18	11	28	31	28	23	23	77	6	2	2	0	0	179
27 to 29	4	3	7	6	5	4	5	4	6	3	4	8	2	52
30 to 32	4	4	8	11	16	19	13	15	4	18	1	2	9	133
33 to 35	2	3	6	6	12	12	4	3	9	13	1	4	22	36
36 to 38	2	0	2	1	3	1	4	3	3	6	3	4	4	87
39 to 41	1	0	0	2	3	4	6	7	4	12	2	3	36	80
42 to 44	0	0	0	0	0	3	1	0	1	1	1	0	4	11
45 to 47	0	0	1	0	0	1	1	3	0	8	2	5	20	41
48 to 50	0	0	0	0	0	0	0	1	1	2	0	2	9	15
Total No. of cases	68	49	92	70	79	73	59	46	35	65	16	29	106	787

TABLE II
Time of Onset of Late Gynaecological Sequelae in 491 Cases, out of 787 Tube Ligations Serially
Recorded With Age-wise Year-wise Frequency Distribution

Age group in years	1 year or below	2 year	3 year	4 year	5 year	6 year	7 year	8 year	9 year	10 year	11 year	12 year	13 year or more	Total No. of cases in each group
15 to 17	1	0	0	0	0	0	0	0	0	0	0	0	0	1
18 to 20	26	12	8	0	2	0	0	0	0	0	0	0	0	48
21 to 23	15	9	4	3	5	1	1	1	0	0	0	0	0	39
24 to 26	32	19	21	18	10	7	4	3	0	1	0	0	0	115
27 to 29	7	9	9	4	1	2	2	2	0	1	1	0	0	38
30 to 32	17	10	17	7	9	12	7	1	2	2	0	1	3	83
33 to 35	4	5	8	7	8	5	1	1	4	1	0	1	3	48
36 to 38	1	3	6	0	1	1	2	1	1	3	0	0	0	19
39 to 41	5	4	4	7	5	4	5	5	2	8	1	2	4	56
42 to 44	0	0	1	0	2	1	0	0	0	1	0	0	2	7
45 to 47	0	1	1	3	2	2	3	2	3	3	0	5	1	26
48 to 50	0	3	0	0	1	0	0	0	0	0	0	0	2	6
Total No. of cases in each column of symptom free year	108	75	79	49	46	35	25	16	13	19	2	9	15	491

TABLE III

Age-wise Distribution of Gynaecological Ill Health and Hysterectomy in 787 Tube Ligations Serially Recorded

Age group in years	White discharge I	Pelvic pain II	Mens- trual abnor- mality III	2 or more of the pre- vious com- binations I, II, III	Positive physical examina- tion finding (in dur- ing pel- vic ten- derness	Hysterec- tomy
15 to 17	1	0	0	0	0	0
18 to 20	37	33	25	31	21	5
21 to 23	31	24	23	25	21	10
24 to 26	94	64	65	74	54	23
27 to 29	29	21	19	19	10	10
30 to 32	75	56	42	58	33	28
33 to 35	39	24	32	32	25	13
36 to 38	15	13	9	10	8	6
39 to 41	33	29	37	35	27	17
42 to 44	7	6	7	4	4	4
45 to 47	18	17	18	17	8	15
48 to 50	5	2	2	2	0	1
Total	384	289	279	307	211	132

TABLE V

Effect of Pre-operative, Gynaec. Complaints, on the Late Sequelae in 787 Tube Ligations Serially Recorded

Total No. of Tube ligation studied 787

Pre tube ligation Gynaec. complaints are seen in 116 cases (52 ± 64) 14.7%

Preoperative Gynaec. complaints since Menarche Total 52 cases	Specific aspects studied	Gynaec. complaints acquired during sexual life (64 cases)
25 cases (48.07%)	Complaints remain unchanged after tube ligation operation	18 cases (29.6%)
26 cases	Complaints got aggravated after tube ligation operation	43 cases (67.1%)
1 case	Complaints got relieved after tube ligation operation	3 cases (4.6%)

The psychological disturbances are studied in 787 cases and mental illness obvious on examination and history is found in 26 cases (3.3%). Failure rate in these 787 cases are recorded, 2 cases out of 787 (0.25%) Incidence of major gynaec surgery (hysterectomy) in these 787 cases with follow up ranging from 1 to 13 years or more after tube ligation is 132 cases (17.5%).

The effects of gynaec complaints present before tube ligation operation on the development of late gynaecological sequelae are studied in the Table V. In all 116 cases (14.7%) had pre tube ligation gynaec complaints. Comparison is made between those having complaints since their menarche and those who had this complaints acquired during sex life viz., after marriage, child birth, abortions and surgical interventions.

Discussion

There is a wide variation in the reported incidence of late sequelae of tube ligation in the Indian literature and this is probably due to different criteria adopted for positive recording and also due to different follow up periods. For brevity, only the maximum and minimum figures quoted in the available Indian literature are mentioned. Menstrual changes in the present study are present in 35.5% of cases while those reported in the literature varied from 3.9% (Gupta 1974) to 55% (Dawn 1966).

Vaginal discharge formed 48.2% in this study while those reported in the literature varied from 5% (Wagh 1966) to 39% (Gomati 1979 urban group).

Pelvic pain is noted in 36.55% of cases in the present study while in the literature it varied from 5% (Kuntal 1975) to 66.6% (Chakravarthy 1966).

The psychological disturbances noted in the present rural study is 3.3%, and the reported incidence varied from 1% (Adatia 1966) to 47.58% (Das gupta 1970).

Dispacunia is noted in 0.6% of cases in the present study while that reported varied from 0.6% (Adatia and Adatia 1966) to 13.71% (Das gupta 1970).

The incidence of major gynaec surgery in the present study is 17.5% and in the literature it varied from 19% (Palainiappan 1978) to 39% (Chakravarthy 1966).

While studing these women one is impressed by the genuineness of their complaints but in a good proportion of them the physical findings are not impressive.

It is apparent from the study of the Table III that in 307 cases out of 787 cases studied, there is combination of two or more gynaec complaints. Out of these 307 cases, 211 cases had positive physical examination findings, which includes those with pelvic tenderness and also indurations in the fornix. Out of these 211 cases, in 105 cases clinically identifiable gynaecological illness is found. So in the remaining 106 cases one has to explain the combinations of gynaecological symptoms associated with physical examination finding of pelvic tenderness with or without induration in the fornix. They formed 13.3% of the tube ligated patients attending the hospital (105 out of 787 cases).

It is possible in some cases the late sequelae of tube ligation are actually due to pathology already existing at the time of tube ligation operation. So the possible effects of the state of gynaecological health before tube ligation, on the incidence of late sequelae are studied in the Table V; 14.7% (116 out of 787 cases) had some preoperative gynaec abnormality. In 52 women the complaints are from menarche and 64 cases the complaints are acquired during sex life. The points made out in their behaviour after tube ligation are; when the complaints are since menarche there is 50% chance of their aggravation,

while in the group with the complaints acquired during sex life the risk is 67.1%.

Patients do not come to us because some organs are affected. They come for the relief of their complaints. One of the paths of clinical medicine is to identify syndromes from the unchartered clinical data. For better understanding and management of these patients with gynaecological symptoms and signs who do not fit into well known disease entities I wish to call".

Tubal Ligation Syndrome.

Definition: The minimum criteria for its diagnosis is the presence of at least two major gynaecological symptoms in any combination with positive pelvic or fornicial tenderness with or without induration. In its complete form it may appear with triad of symptoms; menstrual abnormalities, vaginal discharge and pelvic pain.

Pathogenesis: The anatomical peculiarities of the tube, altered physiological functions, frequently present pathogenic organisms in the tube, monthly sterile inflammations that normally occur in the tube and the introduction of the foreign body in the form of non absorbable ligature material; result in chronic inflammation with changes in the tubes, ovaries, uterus and other pelvic organs.

Clinical features: In the susceptible individuals the symptoms start appearing two to three years after tubeligation operation, in an average case; in the form of minor changes from her previous stable gynaec history. These trivial changes get gradually established, while one or two of the gynaec complaints may dominate the picture. The main symptoms being, menstrual changes, vaginal discharge and pelvic pain. Some times dysparunian and upper abdominal discomfort are noted. The upper abdominal discomfort may be due to para aortic lymph

node inflammation as the lymphatic channels draining the infected tubes and ovaries may also affect the para aortic lymph nodes.

It is important to exclude systemic, extra-genital and other intra-abdominal causes for the above complaints, with the help of available investigations.

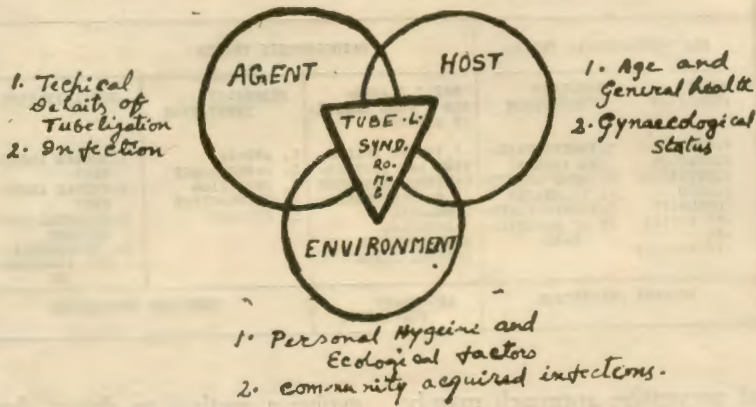
It may be mentioned here that community acquired cervical infections are common and they may act as a source of infection even if the tubes are sterile at the time of tube ligation. It may be also true that the originally non-infected racemose glands of the cervix may get infected due to the discharge of the infected tubal fluid from the uterine segment of the divided Fallopian tube. Thus dormant cervicitis may be a cause of Tubal ligation Syndrome; and an apparent cervicitis may result because of Tubal ligation Syndrome.

Differential Diagnosis: In a way it looks like pelvic inflammatory disease where the tempo of inflammation is slow, but the fundamental difference being, the anatomical mutilation of the tube present in the Tubal Ligation Syndrome.

Treatment: Has to be individualised. Some do not require treatment, others only reassurance, while some others need symptomatic treatment in the form of chemotherapeutic agent for infection, anti-inflammatory drugs, analgesics and antispasmodics for a variable time depending on the clinical response. Usually response to treatment is good, but very often the symptoms come back after a variable period of time. Depending on the individual patients assessment, taking into consideration their social and economic position, which do not permit expensive repeated medical treatment; and the degree of inconvenience caused by the symptoms, surgery may be required which is often a pan hysterectomy.

TABLE VI
Determinants of Tubal Ligation Syndrome

DETERMINANTS OF TUBELIGATION SYNDROME



ENVIRONMENT

1. Environmental sanitation and emotional atmosphere in the House.
2. Beliefs, customs, habits and other ecological factors in urban, rural and Industrial areas.
3. High incidence of sexually transmitted disease in the community.
4. Climatic variations—resulting in reduced resistance of the body increased colonisation of bacterial and fungal infections in the genital areas.

TABLE VII
Natural History and Evolution of Tubal Ligation Syndrome

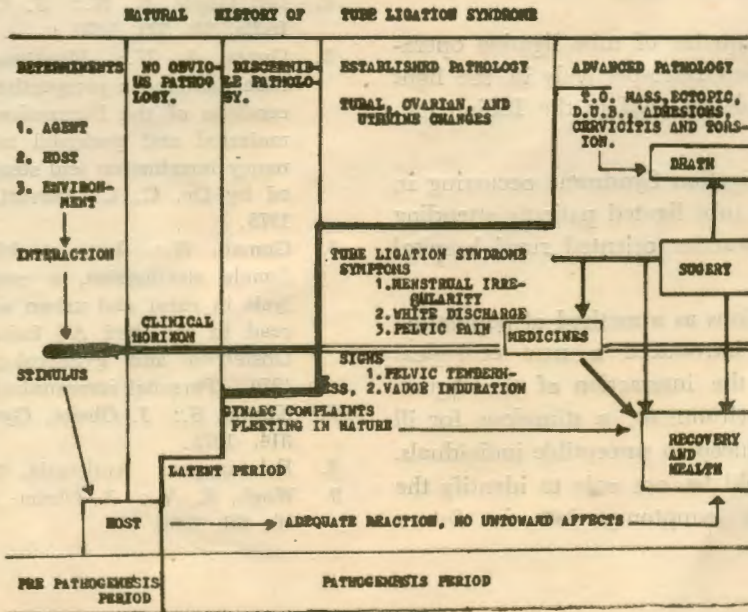


TABLE VIII

Levels of Prevention of Gynaecological Ill Health Following Tube Ligation Operation

LEVELS OF PREVENTION OF TUBE LIGATION SYNDROME				
PRE PATHOGENESIS PERIOD		PATHOGENESIS PERIOD		
HEALTH PROMOTION	SPECIFIC PROTECTION	EARLY DIAGNOSIS : TUBE LIGATION SYNDROME	DISABILITY LIMITATION	SOCIALISATION
1. HEALTH EDUCATION 2. NUTRITION 3. GOOD COMMUNITY OBSTETRICS AND GYNAECOLOGY	1. INDIVIDUALISED ADVISE 2. GOOD SURGICAL TECHNIQUE 3. IDENTIFICATION OF SUSCEPTIBLES	1. PROPER EVALUATION AND INDIVIDUALISED TREATMENT. 2. NO TREATMENT MEDICAL SURGICAL 3. SURVIVENCE OF DOUTFUL CASES	1. ANEMIA 2. HAEMORRHAGE 3. INFECTION 4. OBSTRUCTION 5. TORSION	1. SOCIAL ADJUSTMENT 2. SEXUAL ADJUSTMENT 3. PHYSICAL ADJUSTMENT 4. PSYCHOLOGICAL ADJUSTMENT
PRIMARY PREVENTION		SECONDARY PREVENTION	TERTIARY PREVENTION	

A social and preventive approach may be adopted to study this problem. The determinants of the Tubal Ligation Syndrome are described in the form of Agent, Host and Environment in the Table VI, the natural evolutionary history of the disease in the Table VII, and levels of prevention in the Table VIII.

Conclusions

The late sequelae of tube ligation operation are studied retrospectively in the light of the available material in the Indian literature.

A Tubal Ligation Syndrome occurring in 13.5% of the tube ligated patients attending the general practice oriented rural hospital is reported.

Tubal ligations as a method of population control has introduced a new ecological system; with the interaction of the Agent, Host and Environment, a stimulus for ill health is produced in susceptible individuals. Our aim should be, not only to identify the patients with symptoms, but in future

evolve a method to detect those potentially at risk.

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