

# LAPAROSCOPIC EVALUATION OF INFERTILITY

(100 Cases)

By

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## SUMMARY

This study includes laparoscopic evaluation of 100 cases of sterility, which showed normal pelvic organs in 28% of cases. Tubal factor was found in majority (52%) of cases. Main pathologies detected were tubal block, peritubal adhesions, tubo-ovarian mass and tuberculus salpingitis. Ovarian factor was responsible in 10% of cases which includes smooth ovaries, polycystic ovaries, streak ovary and ovarian masses. In 25% cases extensive pelvic adhesions were encountered, of which 21 had previous explorations and 7 cases had tuberculosis. Other findings on laparoscopy were fibroid, endometriosis, congenital genital abnormalities and extensive abdominal tuberculosis. Early post-operative laparoscopy should be considered in view of early diagnosis and treatment of post-operative adhesion resulting from pelvic exploration and infertility surgery.

### Introduction

No infertility investigation can be considered thorough by modern standard unless it includes laparoscopic assessment. The Laparoscopy is a necessary armamentarium for the diagnosis, treatment and prognosis as it allows the specialist to develop the plan of therapy in infertile patients. Early post-operative (second look) laparoscopy has been established for early diagnosis and treatment of post-operative adhesions (Jansen, 1988).

### Material and Methods

During the period of 6 months from

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*Accepted for publication on 2-6-89.*

March 1987 to August 1987, 100 cases of infertility were studied in K.E.M. Hospital, Bombay. The cases in which husbands had normal semen analysis, were only included. Female was interrogated to find out the contributory illness (tuberculosis, diabetes mellitus, sexually transmitted diseases, severe anaemia) and previous operations (appendicectomy, tuboplasty, exploration for ectopic pregnancy etc.).

All cases underwent routine investigations and specific investigation like cervical mucus study, post-coital test. Laparoscopy was done in all the cases along with chromopertubation and premenstrual curettage at the same time.

*Observation and Discussion*

Seventy seven cases of primary and 23 cases of secondary sterility were studied. Age of females ranged from 18-39 years in primary sterility whereas from 21-41 years in secondary sterility. Maximum cases (41.5%) were found in age group of 20-24 years in primary sterility whereas 43.5% in age group of 25-29 years in secondary sterility.

Laparoscopic findings are as follows: (Table I and II and Bar Diagram).

In 29.87% of primary sterility cases pelvic organs were found to be normal, which are the candidates for other investigations. The findings of other authors varied from 37.93% (Sud *et al*) to 66.7% (Varma *et al*). In secondary sterility cases normal pelvic organs were found in 21.73% cases. The findings by various authors vary from 14% (Bhatnagar *et al*) to 52.6% (Varma *et al*).

Tubal pathology was detected in majority of cases i.e. 48% in primary sterility cases, which is comparable with Ambiye

TABLE I  
*Laparoscopy Findings*

Findings	Prim. No.	Sterility Percentage	Sec. No.	Percentage
(A) Normal Findings	23	29.8	5	21.7
(B) Tubal Factors (Pathology)	37	48.0	15	65.2
(a) Bilateral tubal block <i>without</i> adhesion	5	6.5	4	17.4
(b) Bilateral tubal block <i>with</i> adhesion	13	15.9	3	13.00
(c) Tubercular Lesion	5	6.5	—	—
(d) Tubo-ovarian mass				
— Unilateral	3	3.9	2	8.6
— Bilateral	3	3.9	1	4.3
(e) Unilateral tubal block	4	5.2	3	13.0
(f) Patent tubes <i>with</i> peritubal adhesions	3	3.9	1	4.3
(g) Congenital rudimentary tubes	1 (Bil)	1.3	1 (Unit)	4.3

TABLE II  
*Laparoscopy Findings*

Findings	Prim. No.	Sterility Percentage	Sec. No.	Sterility Percentage
(A) Ovarian Pathology	9	11.7	1	4.3
(a) Polycystic ovaries	1	1.3	—	—
(b) Streak ovaries	3	3.9	—	—
(c) Smooth ovaries	3	3.9	1	4.3
(d) Follicular cysts	1	1.3	—	—
(e) Ovarian mass	1	1.3	—	—
(B) Extensive Pelvic Adhesions	15	19.4	10	43.47
(C) Fibroid	1	1.3	1	4.3
(D) Endometriosis	4	5.2	—	—
(E) Congenital Abnormalities	4	5.2	—	—
(F) Abdominal Tuberculosis	1	1.3	—	—



*et al* (53.34%) and Maru *et al* (45.7%). Tubal pathology was detected in 65.2% of secondary sterility which agrees with 61.1% by Ambiye *et al* and 60.5% by Sud *et al*.

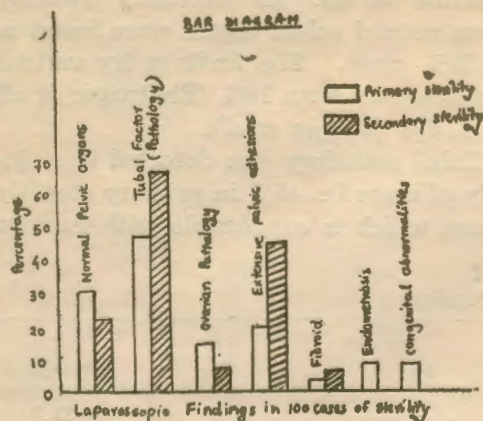


FIG. 1

Tuberculous salpingitis was encountered in 5% of primary sterility cases, whereas others have recorded it in 2.4% (Ambiye *et al*) to 12.12% by Gupta *et al*. We did not encounter any case of tuberculous salpingitis in secondary sterility. Only 3 out of 17 cases who had tuberculosis (genital or pulmonary) in past and treated with antiKoch's treatment, showed no evidence of Koch's lesion on laparoscopic examination. Otherwise majority cases showed either frank or sequalae in the form of tubercles on tube, beaded appearance, blocked tubes, tubo-ovarian mass and pelvic adhesions. None had tuberculous endometritis. This indicates that tubes are more commonly involved than endometrium by tuberculous infection and also indicates that antiKoch's treatment can limit the disease but cannot prevent some form of sequalae which are mainly responsible for sterility.

In 11.68% of primary sterility, ovarian pathology was detected on laparoscopy, whereas Ambiye *et al* and Sholapurkar *et al* recorded 1.2% and 13.15% respectively. In secondary sterility ovarian pathology was detected in 4.3% cases whereas Maru *et al* recorded ovarian pathology in 1.56% and Sholapurkar *et al* in 16.6% cases.

In 19.5% of primary and 43.5% of secondary sterility cases extensive pelvic adhesions were encountered on laparoscopy. Incidence of pelvic adhesions reported by Mahamud *et al* is 30.3% and Gupta *et al* is 18.34%. Out of 15 cases of extensive pelvic adhesions in primary sterility, 11 cases had history of exploration while all cases of secondary sterility with adhesion had undergone exploration sometimes in past. Explorations were done for ectopic pregnancy, tuboplasty, adhesiolysis, myomectomy, appendicectomy. History of genital tuberculosis was found in 33.3% of primary and 20% of secondary sterility cases associated with extensive pelvic adhesions. This indicates that previous explorations and tuberculosis leading to pelvic adhesions may be in some cases responsible for infertility. Similarly adhesions may be the culprit in jeopardising the results of tuboplasty in 3 cases.

Fibroid was detected in 1.3% of primary sterility cases, whereas other reports vary from 1.6% (Sud *et al*) and 6.06% (Gupta *et al*). In 4.3% of secondary sterility fibroid was detected on laparoscopy, which is slightly more than reports of Ambiye *et al* (1.38%) and Maru *et al* (2.85%). In both these cases they were small but were situated near the cornual region. No other abnormality was detected in these cases. It is difficult to decide whether they were responsible for infertility.



Endometriosis was detected in 5.2% of primary sterility cases, which is higher than 1.72% by Sud *et al.* We have not come across any case of endometriosis in secondary sterility. Rajan and Ambika in their big series, have reported as high as 23.4% incidence of endometriosis in infertile cases. Out of our 4 cases, 2 cases had ovarian endometriotic cyst, one case had endometriosis over uterosacral ligament and other had endometriotic patch on posterior surface of uterus. Currently endometriosis has been diagnosed more frequently due to increased clinical awareness and diagnostic endoscopy done in each case of long standing infertility, which may be the cause of higher incidence in our series.

Out of 4 cases of congenital abnormalities found in primary sterility, 2 had bicornuate uterus out of which one had rudimentary tubes and smooth ovaries. One patient had blind vagina with uterus and tube absent with enlarged ovaries (Rokitansky Kuster—Hauser Syndrome). Another case also had similar findings but rudimentary uterus and tubes were present and ovaries were less than normal size.

In a case of extensive abdominal tuberculosis uterus and adnexa could not be visualised because of intestine and omentum were stuck up together.

Looking at the above factors most of them are not preventable but can be treated. But post-surgery pelvic adhesion is an iatrogenic cause which can be prevented. Published reports show that adnexal adhesions are common after pelvic operations even after meteculus surgery, and use of various material in view of preventing them. But early post operative laparoscopy has been established for early diagnosis and treatment of post

operative adhesions (Jansen, 1988) that might otherwise lead to infertility or jeopardise the result of infertility surgery. This second look laparoscopy between the time of the serosal healing (8 days) and established adhesion fibrosis (21 days) is a safe and effective way of reducing peritoneal adhesion after pelvic operation in young women. New or reformed adhesions usually are easily separable, often without bleeding and serious complications with much apparent improvement in fimbrio-ovarian anatomy. This procedure can be carried out during the same hospital stay. By doing such simple procedure in some cases at least we can avoid the factor of pelvic adhesion which is responsible for infertility.

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