

# THE DIAGNOSTIC VALUE OF LAPAROSCOPY IN WOMEN WITH PELVIC PAIN

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## ABSTRACT

One hundred and fifty-four patients who had a diagnostic laparoscopy for pelvic pain from 1 November 1984 to 30 October 1987 were reviewed. A total of 68 of these patients had normal pre-operative pelvic examinations; 40 (59%) had abnormal findings on diagnostic laparoscopy. Of the 86 patients with abnormal pre-operative pelvic examinations, 17 (20%) had normal findings on diagnostic laparoscopy. There is a significant error in evaluating the pelvis by clinical examination alone. The results are in accord with those of previous studies and emphasise the importance of laparoscopy in the management of women with pelvic pain.

**Keywords:** Diagnostic Laparoscopy, Pelvic Pain, Pre-operative Pelvic Examination, Laparoscopic Findings

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## INTRODUCTION

One of the most perplexing problems facing the gynaecologist is pelvic pain. It is a common complaint in gynaecological practice and may present in an acute form lasting for days or weeks, or in a chronic form lasting for months or years. When there are objective physical signs and symptoms, the accuracy of diagnosis for the origin of pain is increased. However, all too often, the physical examination is normal or the physical signs are not specific, for example, pelvic tenderness, questionable pelvic mass or adnexal fullness. The final diagnosis as determined through laparoscopy or during laparotomy frequently differs from that based on clinical grounds (1).

Laparoscopy is a valuable clinical tool. It can confirm a clinical impression, establish a definite diagnosis, follow the course of a disease and modify therapy. Certain procedures such as uterine suspension, ovarian cyst aspiration, aspiration of pus/exudate for culture, biopsy of pathological lesions, diathermy and adhesiolysis can be accomplished through the laparoscope. With technical advances, laparoscopic surgery has been extended to myomectomy (subserous), adnexectomy, ovarian cyst resection, removal of a cystoma and tubectomy in cases of tubal pregnancy (2). In cases with acute pelvic pain where reasonable doubt exists as to diagnosis, there is evidence that laparoscopy significantly reduces the number of patients undergoing laparotomy (3 – 8).

The main objective of this study was to determine the accuracy of the pre-operative pelvic examination by laparoscopy.

## MATERIAL AND METHODS

From medical records obtained from 1 November 1984 through 30 October 1987, a total of 154 patients had laparoscopy for pelvic pain at Alexandra Hospital, Singapore.

All laparoscopies were performed with the patients under general anaesthesia with a cuffed endotracheal tube. The technique of laparoscopy has been well described and therefore shall not be described here. A Storz operating laparoscope 26034A was used for laparoscopy.

The age of the patients ranged from 17 to 49 with a mean age of 29. Parity ranged from 0 to 5. A total of 11 patients (7%) reported previous pelvic surgery.

## RESULTS

Pre-operative pelvic examination was classified into normal or abnormal. Laparoscopic findings were classified in the same manner.

Pre-operative pelvic examination in 68 patients (44%) showed normal pelvic findings. A total of 86 patients (56%) had abnormal pelvic findings which included adnexal tenderness and/or adnexal masses, uterine tenderness and/or enlargement and pelvic tenderness.

Table I shows the findings in 154 patients who had laparoscopy. Table II shows the correlation between the pre-operative pelvic examination (normal or abnormal) against laparoscopic findings. Of 68 patients with normal pelvic findings, 40 (59%) had abnormal laparoscopic findings.

Conversely, in 17 (20%) of the 86 patients with abnormal pelvic examinations, normal pelvic organs were found at laparoscopy. Thus, the error on pelvic examination can vary from 20% (normal findings) to 59% (abnormal findings). Table III shows the correlation between laparoscopic findings (normal or abnormal) and pre-operative pelvic examination (normal or abnormal). In 45 patients, laparoscopy did not reveal any pelvic pathology. Of this group, 28 patients (62%) had normal pelvic examinations and 17 patients (38%) had abnormal pelvic examinations. In 109 patients, laparoscopy revealed pelvic pathology. Of this group, 40 (37%)

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had normal pelvic examinations and 69 (63%) had abnormal pelvic examinations. Table IV shows the correlation between diagnosis established at laparoscopy with whether the pre-operative pelvic examination was normal or abnormal. At laparoscopy, pelvic inflammation was demonstrated in 16 cases. In 11 of these cases (69%), the pelvic examination was abnormal because of pelvic tenderness and/or adnexal tenderness. In 5 cases (31%) of pelvic inflammatory disease, pelvic examination was essentially normal.

Ovarian pathology which includes ovarian cyst and its complications, ruptured corpus luteum, ovulation bleeding and polycystic ovaries were found in 18 patients. In 14 patients (78%), the pelvic examination was abnormal because of adnexal masses or fullness. In 4 patients (22%), pelvic examination was normal.

In the group of 18 patients with laparoscopic findings of adhesions, 11 patients had previous pelvic surgery. The type of previous pelvic surgery includes ovarian cystectomy, Caesarean section, salpingectomy, tubo-

plasty, tubal sterilization and appendectomy. As the cause of the adhesions was not clearly stated in most of the clinical notes, no attempt was made to attribute the adhesions to previous surgery. A total of 7 patients (39%) had normal pelvic examinations and 11 patients (61%) had abnormal pre-operative pelvic examinations.

Laparoscopy revealed uterine fibroids in 2 patients, both of whom had abnormal pelvic examinations.

In 21 patients, findings consistent with endometriosis were found at laparoscopy. 12 of the 21 patients (57%) had abnormal pelvic examinations, while the other 9 (43%) had normal pelvic examinations.

In 26 patients, ectopic pregnancy was found at laparoscopy. 15 of them (58%) had abnormal pelvic examinations which demonstrated adnexal masses and/or tenderness. 11 patients (42%) with ectopic pregnancy had normal pelvic examinations.

Table V shows the incidence of normal pelvic findings in patients with pelvic pain reported in the literature.

Table I  
**LAPAROSCOPIC FINDINGS IN  
154 PATIENTS WITH PELVIC PAIN  
OF UNKNOWN CAUSE**

| Findings      | No  | %   |
|---------------|-----|-----|
| Normal        | 45  | 29  |
| PID           | 16  | 10  |
| Ovarian       | 18  | 12  |
| Fibroid       | 2   | 1   |
| Endometriosis | 21  | 14  |
| Ectopic       | 26  | 17  |
| Adhesions     | 18  | 12  |
| Others        | 8   | 5   |
| TOTAL         | 154 | 100 |

Table II  
**CORRELATION BETWEEN PRE-OPERATIVE PELVIC  
EXAMINATION AND LAPAROSCOPIC FINDINGS**

| Pre-Op Examination | Laparoscopic Findings |      |          |      | Total |
|--------------------|-----------------------|------|----------|------|-------|
|                    | Normal                | (%)  | Abnormal | (%)  |       |
| Normal             | 28                    | (41) | 40       | (59) | 68    |
| Abnormal           | 17                    | (20) | 69       | (80) | 86    |
| TOTAL              | 45                    |      | 109      |      | 154   |

Table III  
**CORRELATION BETWEEN LAPAROSCOPIC FINDINGS AND  
PRE-OPERATIVE PELVIC EXAMINATION**

| Laparoscopic Findings | Pre-Operative Pelvic Examination |      |          |      | TOTAL |
|-----------------------|----------------------------------|------|----------|------|-------|
|                       | Normal                           | (%)  | Abnormal | (%)  |       |
| Normal (n = 45)       | 28                               | (62) | 17       | (38) | 45    |
| Abnormal (n = 109)    | 40                               | (37) | 69       | (63) | 109   |
| TOTAL                 | 68                               |      | 86       |      | 154   |

Table IV  
CORRELATION BETWEEN PRE-OPERATIVE PELVIC EXAMINATION AND LAPAROSCOPIC DIAGNOSIS

| Diagnosis     | Pelvic Examination |      |          |       | TOTAL |
|---------------|--------------------|------|----------|-------|-------|
|               | Normal             | (%)  | Abnormal | (%)   |       |
| Normal        | 28                 | (62) | 17       | (38)  | 45    |
| PID           | 5                  | (31) | 11       | (69)  | 16    |
| Ovarian       | 4                  | (22) | 14       | (78)  | 18    |
| Fibroid       | 0                  | (0)  | 2        | (100) | 2     |
| Endometriosis | 9                  | (43) | 12       | (57)  | 21    |
| Ectopic       | 11                 | (42) | 15       | (58)  | 26    |
| Adhesions     | 7                  | (39) | 11       | (61)  | 18    |
| Others        | 4                  | (50) | 4        | (50)  | 8     |
| TOTAL         | 68                 |      | 86       |       | 154   |

Table V  
INCIDENCE OF NORMAL PELVIC FINDINGS IN PATIENTS WITH PELVIC PAIN REPORTED IN THE LITERATURE

| Series                          | No. of Patients | No. of Patients with Normal Pelvis at Laparoscopy | %  |
|---------------------------------|-----------------|---|----|
| Fear (1968)                     | 23              | 6   | 26 |
| Jacobsen and Westrom (1969)     | 814             | 184   | 23 |
| Duignan et al (1972)            | 135             | 84  | 62 |
| Liston et al (1972)             | 134             | 102   | 76 |
| Pent (1972)                     | 38              | 18  | 47 |
| Lundberg et al (1973)           | 95              | 39  | 41 |
| Anteby et al (1974)             | 223             | 35  | 16 |
| Semchyshyn and Strickler (1976) | 198             | 131   | 66 |
| Chaparro et al (1978)           | 223             | 51  | 23 |
| McBride and Newman (1978)       | 42              | 22  | 52 |
| Murphy and Fliegner (1981)      | 100             | 20  | 20 |
| Cunanan et al (1983)            | 1194            | 355   | 30 |
| Ho et al (1989)                 | 154             | 45  | 29 |

## DISCUSSION

This study shows that the laparoscope is an excellent tool in the evaluation of patients with pelvic pain, because diagnosis, and often treatment, are possible without subjecting patients to laparotomy. The safety of the procedure in trained hands is accepted (15). The error in diagnosis at pre-operative pelvic examination in this study ranges from 20% to 59% (see Table II). The presence of pathology in 40 (59%) of the 68 women who had normal pre-operative pelvic examinations and the absence of pathology in 17 (20%) of the 86 women who had abnormal pelvic examinations, is evidence of the poor correlation between pelvic examination and laparoscopic findings. This has been suggested by others (5, 7, 11, 14). Lundberg et al (11) in a study found the presence of pathology in 24 of 47 patients (51%) who had normal pelvic examinations and the absence of pathology in 16 of the 46 patients (35%) who had abnormal pelvic examination.

There was a better correlation between an abnormal pre-operative pelvic examination and abnormal laparoscopic findings (80%). This same experience has been reported by other authors. Fear (3) reported a 74% correlation. In his laparoscopic study, 6 patients out of 23 patients (26%) who had laparoscopic evaluation for pelvic pain were found to have normal pelvis. Jacobsen and Westrom (1) who performed laparoscopy

in 814 patients in whom pelvic inflammatory disease was suspected on clinical grounds, likewise found a 77% correlation between a clinical diagnosis of pelvic inflammatory disease and laparoscopic findings. Similarly, Bahary and Gorodeski confirmed the pre-operative diagnosis of pelvic inflammatory disease in 41 of 63 women with pre-operative diagnosis of chronic pelvic inflammatory disease (65%) on laparoscopy (16). Lundberg et al (11) in his series of 95 patients reported a 59% correlation between an abnormal pelvic examination and abnormal laparoscopic findings. Cunanan et al (14) in a large series of 1194 patients found an even higher correlation at 82.5%.

In this study, 45 of the 154 patients (29%) had normal pelvic findings on laparoscopy. This incidence of normal pelvic findings in patients with pelvic pain has been substantiated by others, as seen in Table V.

There is a significant error in evaluating the pelvis by clinical examination alone. Laparoscopy has provided a definitive diagnosis in 71% of patients with pelvic pain. In nearly a third of the patients, no abnormalities in the pelvis were seen on laparoscopy and other causes for pelvic pain will have to be evaluated.

Laparoscopy also has a negative diagnostic value. The absence of pathology allows one to reassure the patient who fears cancer or some other disease in her pelvic organs.

From this study, it can be seen that diagnostic laparoscopy is an extremely valuable tool and should be considered in the evaluation of a patient with pelvic pain even when no abnormalities seem to be present on pelvic examination. However, there should be an indication before laparoscopy is undertaken. Laparoscopy involves general anaesthesia, is not without risk and should not be used in lieu of an inadequate history and physical examination, but rather to sharpen up the diagnostic index, where the need arises.

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