

# Laparoscopic Appraisal of Infertility and Pelvic Pain in Pakistani Women: AS Years Audit

Pages with reference to book, From 40 To 42

Romana Hamid, Khalid S. Khan, Tariq Mubeen, Junaid A. Razzak ( Department of Obstetrics and Gynaecology, Aga Khan University Medical Centre, Karachi. )

## Abstract

Five hundred and nine laparoscopic examinations performed between 1987-91, (147 procedures for evaluation of gynaecologic pelvic pain and 313 for infertility) revealed ectopic pregnancy (27%), twisted ovarian cyst (18%) and acute pelvic inflammatory disease (14%) in cases of acute gynaecologic pain, and endometriosis (17%) and chronic pelvic inflammatory disease (16%) in chronic pelvic pain. Adhesions (20%), tubal block (15%), endometriosis (9%) and polycystic ovary (7%) were common findings in cases of infertility. These data support the usefulness of this minimally invasive procedure in accurate diagnosis of gynaecological disorders and provides insight into the spectra of diseases seen in Pakistani women with pelvic pain and infertility (JPMA 44 : 40, 1994)

## Introduction

Diagnostic laparoscopy is a minimally invasive procedure which is available to a gynaecologist as a powerful diagnostic tool for both elective and emergency situations. It provides direct visualization of the pelvis which gives accurate information about the pelvic organs<sup>1-3</sup>. Along with diagnostic precision extremely low morbidity and mortality rates are generally, quoted in Western literature<sup>1,3</sup>. In Pakistan, the experience of diagnostic laparoscopy, was limited to only 3 reports on this subject<sup>4-6</sup>. Each of these individual reports have insufficient numbers in their series to represent national figures. The need for a quantitative overview and research integration has been highlighted by Hughes<sup>7</sup> and Thacker<sup>8</sup>. This background prompted us to perform an audit of laparoscopy in our hospital. The results of this audit when combined with other reports<sup>4-6</sup> were thought to represent a valuable appraisal of diagnostic laparoscopy, in Pakistani Women.

## Patients and Methods

The department of Obstetrics and Gynaecology at, the Aga Khan University Medical Centre (AKUMC), Karachi, provides secondary and tertiary level care to patients, most of whom are self-referred. Out-patients are seen in either consulting clinics or emergency room depending upon the nature of complaint. This study was carried out in all patients undergoing laparoscopy at our hospital between January, 1987 and December, 1991. All patients booked for laparoscopy were reviewed by a resident or a consultant in the out-patients department. Preoperatively a complete history was obtained and physical examination was performed and recorded. Once a decision to perform laparoscopy was taken, an informed consent was obtained from the patient. Preoperative investigations included a complete blood count and urinalysis. When indicated a chest x-ray, ECG and clotting profile were also carried out. Laparoscopy was done under general anaesthesia using standard technique<sup>3</sup>. After induction of anaesthesia a small sub-umbilical incision was made and pneumoperitoneum with Co2 was achieved using a verres needle. After inflation of 3-4 litres of gas the verres needle was withdrawn and patient was placed in slight Trendelenburg position. The trocar was then introduced, after extending the sub-umbilical incision, followed by the telescope for visualization of abdomino pelvic

organs. Hydrotubation and endometrial curettage was carried out in cases of infertility. At the completion of the procedure findings were documented in the patients chart. Patients were discharged the same day if they wished and were seen again in a following-up outpatient clinic 2 weeks after the procedure. Patients with gynaecologic pelvic pain were classified as acute and chronic on the basis of duration of the pain; if the duration was from few hours to days it was defined as “acute” and if lasting from weeks to months it was defined as “chronic”. Infertility was defined as inability to conceive despite unprotective intercourse for 1 year duration. Infertility was considered primary if there was no previous history of conception and secondary if there was such history. The criteria used for diagnosis of pelvic pathology were as follows: Normal pelvis: No abnormality was seen, on laparoscopy in the uterus, fallopian tubes, ovaries, pouch of douglas and there were no adhesions; Adhesions: Dense or flimsy bands in the absence of any active pelvic inflammatory disease or endometriosis;-Blocked tubes: No free spillage of dye seen in the peritoneal cavity during hydrotubation indicating total obstruction; Polycystic ovary: Enlarged ovaries with multiple cysts; Endometriosis: Presence of endometrial spots or chocolate cysts in abnormal locations with or without adhesions; Hydrosalpinx: Infection of the fallopian tubes leading to accumulation of serous fluid and swollen appearance; Pelvic inflammatory disease: Infections of the pelvis characterized by the presence of inflammation resulting in distortion of the pelvic organs with or without adhesions; Fibroids: Mass on the uterine surface assessed to be the cause of infertility in the judgement of the consultant gynaecologist. Indications for the procedure, the findings at laparoscopy, duration of stay in hospital and any complications of the procedure were studied. Chi-square test was used for statistical analysis. A p value of <0.05 was taken as significant.

## Results

A total of 509 gynaecological laparoscopies were performed. Medical records of 504 of these were retrievable and were reviewed. The age of the patients ranged from 16 to 45 years (mean 29.9 years). Mean parity was 1.5. The mean duration of procedure including time taken to induce anaesthesia was 39.3 minutes (excluding those cases in which laparoscopy was followed by another lengthy procedure like laparotomy e.g. in cases of ectopic pregnancy). The mean duration of stay at the hospital was 2.4 days (excluding those cases in which laparotomy was performed).

**Table I. Indications for gynaecologic laparoscopy.**

<b>Indication</b>	<b>No.</b>	<b>%</b>
<b>Primary infertility</b>	<b>181</b>	<b>35.9</b>
<b>Secondary infertility</b>	<b>132</b>	<b>26.2</b>
<b>Chronic gynaecologic pain</b>	<b>76</b>	<b>15.0</b>
<b>Acute gynaecologic pain</b>	<b>71</b>	<b>14.0</b>
<b>Menorrhagia</b>	<b>9</b>	<b>1.7</b>
<b>Primary amenorrhea</b>	<b>8</b>	<b>1.5</b>
<b>Secondary amenorrhea</b>	<b>5</b>	<b>1.0</b>
<b>Others*</b>	<b>22</b>	<b>4.3</b>
<b>Total</b>	<b>504</b>	<b>100</b>

**\*Others include conditions like menstrual irregularities, oligomenorrhea, adnexal mass, abdominal mass, etc.**

Table I shows the indications for the laparoscopies performed. Infertility and gynaecologic pain were

the commonest indications. Laparoscopies were performed for primary and secondary Infertility in 62% of patients, for acute and chronic gynaecologic pain in 29% and for primary and secondary amenorrhea in 2.5%. Menor rhagia, oligomenorrhea, adnexal mass, abdominal mass, etc. accounted for the rest. The findings at laparoscopy for evaluation of pelvic pain and infertility are shown in Tables II and III respectively. Pelvic pain was the second most common indication for laparoscopy (147 cases). In 61 (41.5%) of these patients no pelvic pathology was seen on laparoscopy. Ectopic pregnancy (26.7%) and acute pelvic inflammatory disease (14%) were the commonest findings in cases of acute pain, whereas ovarian cysts (9.2%), endometriosis (17.1%) and chronic pelvic inflammatory disease (8.1%) were the common findings in cases of chronic pain (Table II).

**Table II. Findings at laparoscopy for evaluation of gynaecologic pain.**

Findings	Gynaecologic pain				Total	
	Acute		Chronic		No	%
	No.	%	No.	%		
Normal pelvis	24	33.8	37	48.6	61	41.5
Cystic ovaries	13	18.3	7	9.2	20	13.6
Ectopic pregnancy	19	26.7	0	0.0	19	12.9
Endometriosis	0	0.0	13	17.1	13	8.8
Pelvic inflammatory disease:						
Chronic	0	0.0	12	15.7	12	8.1
Acute	10	14.0	0	0.0	10	6.8
Others*	5	7.0	7	9.2	12	8.1
<b>Total</b>	<b>71</b>	<b>100</b>	<b>76</b>	<b>100</b>	<b>147</b>	<b>100</b>

\*Others include conditions like corpus luteal cyst, haemorrhagic ovarian cyst, fixed retroverted uterus, uterine perforation due to IUCD, etc.

**Table III. Findings at laparoscopy for evaluation of infertility.**

Findings	Primary		Secondary		Total	
	No.	%	No.	%	No.	%
Normal pelvis	55	30.3	44	33.3	99	31.6
Adhesions	37	20.4	26	19.7	63	20.1
Blocked tubes	26	14.3	21	15.9	47	15.0
Polycystic ovary*	18	9.9	3	2.3	21	6.7
Endometriosis	15	8.2	13	9.8	28	8.9
Hydrosalpinx	7	3.8	6	4.5	13	4.1
<b>Pelvic inflammatory disease:</b>						
Chronic*	4	2.2	7	5.3	11	3.5
Acute*	3	1.6	7	5.3	10	3.2
Fibroids	5	2.7	3	2.2	8	2.5
Others**	11	6.0	2	1.5	13	4.1
<b>Total</b>	<b>181</b>	<b>100</b>	<b>132</b>	<b>100</b>	<b>313</b>	<b>100</b>

\*Difference statistically significant ( $P < 0.05$ );

Chi-Square test used.

\*\*Others include benign atrophy of ovaries; streak ovaries, hypoplastic uterus and ovaries, tuberculosis, anovulation, congenital absence of one tube and ovary, etc.

Table III shows the laparoscopic findings in 313 patients with infertility. Of these 99(33.3%) had a normal pelvis. Abnormal findings in all cases of infertility put together included adhesions (20.1%), blocked tubes (15%), endometriosis (8.9%) polycystic ovary (6.7%) and others. However, polycystic ovary was more common in primary infertility ( $p < 0.05$ ) and pelvic inflammatory disease was more common in secondary infertility ( $p < 0.05$ ). The experience with complication in this study showed a low figure of 34 cases (rate of 6.7%), of which 23 (4.5%) were related to difficulties with anaesthesia and pre-operative work-up. Only 11 (2.1%) were attributed to the procedure itself. These included difficulty with trocar insertion (4), wound infection (3), difficulty in obtaining pneumoperitoneum (2), urinary retention (1) and bowel perforation (1). There were no mortalities.

## Discussion

The present study showed that pelvic pain and infertility were the two most common indications for laparoscopy, acute and chronic pelvic pain revealed quite different spectra of diseases; primary and secondary infertility revealed quite similar spectra of disorders except polycystic ovary was more common in the former and pelvic inflammatory disease was more common in the latter and the complication rate was low. The low complication rate of 6.7% is comparable to figures from Western literature<sup>1,3</sup>. This establishes the safety of this procedure in our hospital. A major indication for the procedure was acute and chronic pelvic pain. Our results show that 33% and 48% of patients undergoing laparoscopy for acute and chronic pain respectively had normal pelvis. Others had pathologic diagnoses. These findings are in conformity with those described in another series from Lahore<sup>5</sup>. Our findings about the absence of pathology up to a third of these cases is consistent with reported literature on the subject<sup>19-12</sup>. These findings highlight that laparoscopy is an important



diagnostic tool in evaluation of these patients as there is significant error in evaluating the pelvis by clinical examination and imaging techniques<sup>11</sup>. The other major indication for performing laparoscopy was evaluation of infertility.

**Table IV. Pelvic pathology in patients with infertility - integration of results from 5 series (n = 1799).**

	Series*					Prevalence $\Sigma f / \Sigma n + +$ (%)
	A (n = 780)	B (n = 72)	C (n = 180)	D (n = 429)	E (n = 313)	
<b>Pelvic findings (f)</b>						
Normal pelvis	0 <sup>+</sup>	38	5	165	99	307/1019(30)
Adhesions	50	8	84	0 <sup>+</sup>	63	205/1370(15)
Blocked tubes	40	36	68	39	47	230/1799(13)
Polycystic ovary	70	5	0 <sup>+</sup>	30	21	126/1619(8)
Endometriosis	20	1	3	15	28	67/1799(4)
Hydrosalpinx	0 <sup>+</sup>	0 <sup>+</sup>	6	0 <sup>+</sup>	13	19/493(4)
<b>Pelvic inflammatory disease</b>						
disease	50	11	5	0 <sup>+</sup>	21	87/1370(6)
Fibroids	15	6	4	13	8	46/1799(2)

\*A) Qaid-e-Azam Medical College<sup>6</sup>, B) Rawalpindi Medical College<sup>4</sup>, C) Allama Iqbal Medical College<sup>5</sup>, D) Nishtar Medical College<sup>7</sup> and E) Aga Khan Medical College (present series).

+ Data not included due to lack of well defined criteria in the study.

+ + Studies without well defined criteria excluded from calculation of prevalence rates. Rate calculated by dividing the sum of frequency of finding ( $\Sigma f$ ) with the sum of total subjects ( $\Sigma n$ ) in the studies included for analysis.

Table IV comprises data on pelvic pathology derived from 5 different series giving insight about the pattern of disease in Pakistani women. In general 30% of women evaluated had normal pelvis. Most prevalent abnormal pelvic pathology was abdomino-pelvic adhesions comprising 15% of cases, followed by blocked tubes (13%), polycystic ovary (8%), pelvic inflammatory disease (6%), endometriosis (4%), hydrosalpinx (4%) and fibroids (2%). Various therapeutic steps such as ovulation induction therapy, adenolysis, insemination techniques etc. are taken in accordance with findings at laparoscopy. The results of our series combined with other studies reveal a low prevalence of tubal block and pelvic inflammatory disease as compared to other literature reports<sup>13-15</sup>. This may have important implications for simpler assisted reproductive techniques like superovulation, semen swim-up and intra-uterine insemination in Pakistani infertile population. Laparoscopy examination is a basic and necessary diagnostic method for obtaining real notion of the state of the internal genital organs. This study supports the safety and diagnostic efficacy of this minimally invasive procedure and provides insight into the spectra of diseases, seen in Pakistani women with pelvic pain and infertility.

### Acknowledgements

The authors are grateful to Professors S.C. Robinson and RN. Qureshi for valuable advice, critical review and approval for submission of the manuscript; Mr. Javed Iqbal Qureshi and Hassan Ali

Samnani for preparation of manuscript and all the consultants and staff for their untiring efforts during this study.

## References

1. Millard, P.R. Laparoscopy in small community free-standing surg.center. *Am.J.Obstet.Gynecol.*, 1987;156:1480-85.
2. Bruhat, MA., Mage. O., Chapron, C. et al. Present day endoscopic surgery in gynaecology. *Eur.J.Obstet.Gynaecol.*, 1991;41:4-12.
3. Sadler, J.M., Berci, O. and Paz-Partlow, M. Elective diagnostic laparoscopy. *Am.J.Surg.*, 1991;161:326-31.
4. Mahmud, O. Use of laparoscopy in infertility. *Pak.J.Obstet. Gynaecol.*, 1992;5:60-67.
5. Rana, T. Role of laparoscopy in gynaecological diagnoses: an appraisal of 180 cases. *Pak.J. Obstet. Gynaecol.*, 1992;5:26-37.
6. Riaz, G.S., Saeed, F. A study of 780cases of infertility at QAMC, Bahawalpur. *Specialist*, 1992;8:35-39.
7. Hughes, G.A. Meta.araalysis and the critical appraisal of infertility literature. *Fertil. Steril.*, 1992;57:275-77.
8. Thacker, S.B. Mets-analysis: a quantitative approach to research integration. *JAMA.*, 1988;259:1685-89.
9. Al-Suleman, S.A. Laparoscopy in the management of women with chronic pelvic pain. *Aust. N.Z.J. Obstet. Gynaecol.*, 1991;31:63-65.
10. Vercellini, P., Fedele, H., Molteni, P.et al. Laparoscopy in the diagnosis of gynaecologic chronic pelvicpain. *Int.J.Gynaecol. Obstet* 1990;32:261-65.
11. Ho, H.K., Sim, LN., Ho, L.K. The diagnostic value of laparoscopy in womenwith pelvic pain. *Singapore Med. J.*, 1989;30:453-56.
12. Vercellini, P., Fedele, L, Arcaini. Let al. Laparoscopy in the diagnosis ofchronic pelvic pain in adokscentwomen. 3. *Reprod.Med.*, 1989;34:827-30.
13. Cahil, D.J., Cooke, I.E., and Darling. R. The influence of laparoscopy on infertility management. *Ir.J.Med.Sci.*, 1991;160:51-52.
14. Sharma, R. and Sharma, V. The infertile women - a study of 120 cases. *J.Indian Med.Assoc.*, 1991;89:31-33.
15. Balasch. 3., Fabregues, F.. Jove, I.C. et al. Infertility factors and pregnancy outcome in women aboveage 35. *GynecoL EndocrinoL*, 1992;6(1):31-35.