

EXPERIENCE WITH THE LAPAROSCOPE IN THE EVALUATION OF INFERTILE WOMEN IN SAGAMU

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ABSTRACT

Objective: Laparoscopy has been found to be very useful in the evaluation of tubo-peritoneal factors in female infertility in Nigeria^{1,2,3,4}. This is because of the peculiarity of infective tubo-peritoneal disease as the main aetiological factory of infertility in the region^{2,4,5}. This study was carried out to report our experience with the laparoscope with the aim of focusing attention on its desirability and what problems there may be with the use.

Materials and methods: The laparoscopic findings in 215 infertile women over a period of seven years (1993-1999) at the infertility unit of the Ogun State University Teaching Hospital Sagamu were collated.

Result: Eighty-two percent of the women had secondary infertility as against 18% with primary infertility. Pelvic adhesions were detected in 74.9% of the cases and patent tube(s) were found in 68.4%. Uterine fibroid was the commonest additional finding. Mild abdominal pain and subcutaneous emphysema were recorded in three (1.4%) and this necessitated admission for 24 hours in one patient with emphysema.

Conclusion: Laparoscopy is a diagnostic method with a high positive yield and few complications. Its wider use as first line investigative tool in infertility evaluation is advocated.

INTRODUCTION

Infertility worldwide remains a major gynaecological problem with devastating psychosocial effect on the couple⁶. It is a common reason for routine gynaecological consultation in most out-patient clinics as well as at Ogun State University Teaching Hospital Sagamu.

Infective causes including sexually transmitted infections, post abortal and puerperal sepsis, leading to tubal blockage, are still the commonest aetiological factors for infertility in this environment^{1,7}. A vital aspect of evaluation of the female therefore is that of determining the tubal and peritoneal factors for the infertility in the patient.

In this regard, laparoscopy and dye test has been found to be a gold standard in the evaluation of infertile women at the Ogun State University Teaching Hospital Sagamu. In this center, laparoscopy and dye test is a routine first line method of evaluation of the infertile female. This paper reports on our experience with the use of the laparoscope over a seven-year period.

METHODS

The patients were women who had laparoscopy with or without dye test done at the Ogun State University Teaching Hospital Sagamu for the purpose of infertility evaluation between

January 1993 and December 1999.

The procedure was done in the mid-luteal phase of the menstrual cycle for the added advantage of observing the ovaries for stigmata of ovulation. The single puncture technique was used under conscious sedation with intravenous pethidine and diazepam. One per cent xylocaine was infiltrated into the abdominal wall just before pneumoperitoneum is created. In a few patients who could not tolerate the procedure under conscious sedation, diazepam injection, 10mg and ketamine hydrochloride in a dosage usually between 50mg and 150mg were given intravenously. Endometrial biopsy was done occasionally as an additional procedure if indicated. Room air was used to create pneumoperitoneum for all the patients.

A standard format for recording laparoscopic findings and other personal data of infertile women was completed for every case. The patient was discharged home the same day. She was encouraged to come with a relation who would accompany her home following adequate rest after the procedure.

FINDINGS

A total of 228 laparoscopies were performed during the period at the Ogun State University Teaching Hospital Sagamu. Two hundred and fifteen of these (94.3%) were done for infertility evaluation. The remaining 13 (5.7%) were done for such indications as ambiguous genitalia 2, primary amenorrhoea 3, and suspected ectopic gestation 4. The procedure was abandoned in

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2 cases (0.9%) and the records of 2 patients could not be traced. Only the 215 cases of infertility that were completely evaluated using the laparoscope were analyzed in this study.

The majority (70.0%) of the patients were aged between 25 and 34 years. Eighty two percent (176 cases) presented with secondary infertility as against eighteen percent (39 cases) with primary infertility.

Table 1A. assesses the peritoneal status of the patients. Pelvic adhesions of varying grades and severity were found in 161 cases (74.9%). Of these 127 patients (78.9%) were secondarily infertile and 34 patients (21.1%) were primarily infertile. The pelvis was devoid of adhesions in 54 patients (25.1%)

Table 1B. shows the tubal status of the patients scoped. There was bilateral free spillage confirming patency of the tubes in 84 patients (39.1%), unilateral occlusion in 63 patients (29.3%) and bilateral occlusion in 68 patients (31.6%). Hydrosalpinges with or without patent tubes was found in thirty patients (16.7%) of which twenty-six (12.1%) were unilateral and ten (4.7%) were bilateral.

Table 1A: Peritoneal Status

	Primary infertility N=39 (%)	Secondary infertility N=176 (%)	Total N=215 (%)
Pelvic adhesions present	34 (87.2)	127 (72.2)	161 (74.9)
No Pelvic adhesions present	5 (12.8)	49 (27.8)	54 (25.1)

Table 1B: Tubal Status

	Primary infertility N=39 (%)	Secondary infertility N=176 (%)	Total N=215 (%)
Both tubes patent	19 (48.7)	65 (36.9)	84 (39.1)
Unilateral occlusion	16 (41.0)	47 (21.9)	63 (29.3)
Bilateral occlusion	13 (33.3)	55 (25.6)	68 (31.6)
Hydrosalpinges			36 (16.7)
• Unilateral	0	26 (14.8)	
• Bilateral	0	10 (5.7)	

Additional anomalies found in the study are shown in Table 2A. Uterine fibroid was the commonest additional finding (14.1%) and in addition to this, were 2 cases each of biconuate uterus and hypoplastic uterus. The occurrence of congenital anomaly was found only in the primary infertility patients. Two (5.1%) cases of endometriotic implants were also identified.

Evidence of ovulation was present in 193 cases (89.8%) and absent in 22 (10.2%) cases. Table 2B.

Table 2A: Additional Abnormalities

Abnormality	Primary infertility N=39 (%)	Secondary infertility N=176 (%)	Total N=215 (%)
Uterine Fibroid	8 (20.5)	33 (18.2)	41 (19.1)
Bicornuate Uterus	2 (5.1)	0 (0.0)	2 (0.9)
Hypoplastic Uterus	2 (5.1)	0 (0.0)	2 (0.9)
Endometriotic nodule	2 (5.1)	0 (0.0)	2 (0.9)

Table 2B: Evidence of Ovulation at Laparoscopy.

Evidence of ovulation	Primary infertility N=39 (%)	Secondary infertility N=176 (%)	Total N=215 (%)
Present	28 (71.8)	165 (93.8)	193 (89.8)
Absent	11 (28.2)	11 (6.2)	22 (10.2)

The problems and complications encountered during the procedure are analyzed in Table 3. Mild abdominal pain was the commonest (1.8%). In three (1.4%), there was need to dilate the cervix due to cervical stenosis. On the other hand, one case (0.5%) of massive dye reflux due to incompetence of the cervix was recorded. Subcutaneous emphysema occurred in four patients (1.8%).

Table 3: Problems/Complications Encountered

Problem/complication	No =215	%
Abdominal Pain	4	1.8
Subcutaneous emphysema	4	1.8
Wound Sepsis	3	1.4
Wound Haematoma	2	0.9
Bleeding from subcutaneous vessels	2	0.9
Cervical stenosis requiring dilatation	3	1.4
Cervical incompetence / dye reflux	1	0.5
Injury to intestine	0	0
Injury to intra-abdominal vessels	0	0

DISCUSSION

The laparoscope found its greatest use in infertility evaluation especially in developing countries^{8,9}. Our experience in Sagamu is similar to this observation. The single puncture technique was used in this review, as that is the only facility available in our center. While we acknowledge the fact that the double puncture technique may have a superior advantage over the single

puncture technique, our experience with the single puncture technique has been very useful and centers without the double puncture facilities are encouraged to optimize the use of the single puncture equipment. Most of our patients were scoped under conscious sedation after counseling and were without any major difficulty. This is similar to the experience of other workers^{8,10}. The suitability of this has been acknowledged in the past¹⁰. A few women however benefited from general anesthesia as has been advocated by some workers^{8,9,10}.

The role of pelvic infection and its attendant sequelae of pelvic adhesion and tubal blockage are once again highlighted in our review. Compared with other studies¹⁰, it would appear that we had the highest incidence in our center.

The complementary role and superiority of laparoscopy over hysterosalpingography is also brought to the forefront in our review. The number of women with laparoscopic confirmation of tubal blockage was less than the number with pelvic adhesion. This is to suggest that hysterosalpingographic finding of patent tube may not suffice to conclude normal tubal function. Rather, tubal distortion and other effects due to pelvic adhesion and infection must be ruled out using the laparoscope. Hysterosalpingogram is therefore inadequate for today's infertility evaluation^{8,10}.

Our experience shows that uterine fibroid was the commonest additional finding. Their contribution to infertility as well as the need for surgery if infertility persists, is controversial. Endometriosis was recorded in only two patients. Perhaps, the single puncture technique used coupled with the believed low incidence of endometriosis in our environment and lack of enthusiasm on the part of most gynaecologists to look for it could account for this low incidence^{3,11}.

It is instructive to note that abdominal pain and subcutaneous emphysema were the commonest complications in our experience. Pain may be subjective and dependent on several other extraneous factors apart from that due to the trauma from the instruments. It is also easily managed with simple analgesics. Subcutaneous emphysema was found to occur mostly in cases done by resident gynaecologist. Experience as well as adequate training and individualized anaesthetic method are crucial factors towards reducing the incidence of these complications.

CONCLUSION

The laparoscope remains an invaluable tool in the evaluation of infertility especially in areas where pelvic infection is common^{9,10}. In addition to its use in making a diagnosis, it also

provides an opportunity to assess feasibility of tubal surgery where such would be indicated¹⁰.

Our experience in Sagamu has shown that it is a diagnostic method with high positive yield and few complications if done by experienced gynaecologists or resident gynaecologists under supervision. It is recommended to gynaecologist with interest in infertility evaluation and care.

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