

PLACE OF LAPAROSCOPY IN PELVIC INFLAMMATORY DISEASE

by

USHA R. KRISHNA, M.D., D.G.O., F.I.C.S.

SHRISH S. SHETH, M.D., F.A.C.S., F.I.C.S., F.C.P.S.

and

NERGISH D. MOTASHAW, M.D., F.R.C.S.

Laparoscopy is an important procedure for detection of pelvic inflammatory diseases particularly for the chronic cases. A significant number of patients with pelvic inflammatory disease do not present any typical symptoms and signs and hence history, examination and routine investigations would help to diagnose only one-third of the cases.

Exploratory laparotomy for doubtful pelvic tuberculosis was not an uncommon procedure in the past nor was it unusual to open an abdomen for tuboplasty after hysterosalpingography and find pelvic tuberculosis. This holds particularly true for countries such as India where genital tuberculosis is common.

Gonococcal infections, puerperal and post-abortal sepsis as well as improper asepsis during gynaecological operations such as D & C hysterosalpingography, ventrisuspension and sterilisation of tubes are contributors to pelvic inflammatory disease. Many of the patients come with sterility and/or chronic abdominal pain. Acute and chronic lower abdominal pain and backache were often treated empirically. Differential diagnosis of acute or chronic adenexitis from endometriosis, ectopic pregnancy, ovarian cyst, fibroid,

enteritis or colitis and even psychosomatic problems was a fairly common dilemma in the past.

Material and Methods

This is a study of 125 cases of chronic pelvic inflammatory disease of both tuberculosis and non-specific varieties detected by laparoscopic examinations. These 125 cases of P.I.D. in this study were detected from 557 laparoscopic examinations. The indications for laparoscopy were sterility, chronic pelvic pain, primary or secondary amenorrhosa, etc. None of these cases were emergency admissions.

All the laparoscopies were done under general anaesthesia by the standard technique as described by Steptoe (1967).

Pneumoperitoneum was created by abdominal or vaginal route by using carbon dioxide or nitrous oxide. There was 1 case of extraperitoneal insufflation and another of emphysema in omentum and mesentery. In both these cases some amount of waiting followed by repeat pneumoperitoneum gave satisfactory vision. In 2 cases visualisation of pelvic organs was not very satisfactory due to intraperitoneal adhesions.

A second puncture was occasionally required to mobilise the tubes or break some flimsy adhesions. No further operative laparoscopic procedure such as

From: Department of Obstetrics & Gynaecology, K.E.M. Hospital & Seth G.S. Medical College, Parel, Bombay 400 012—India.

Accepted for publication on 8-1-1979.

biopsies were performed in any of these cases.

Hydropertubation with methylene blue was done in most cases unless acute inflammation was suspected and a flare up of inflammation feared. There was 1 instance of rupture of tube during hydro-tubation. There were no significant post-operative complications.

Results

The following were some of the interesting and relevant points in the histories:

Ninety-seven of these 125 cases with P.I.D. were young women less than 30 years of age. Twelve cases had history of previous laparotomies for ventrisuspension, appendicectomy, tuboplasty, C.L. haematoma, cervivopexy, tubal ligation, etc. Eighteen cases had repeated D & C (2-4 times), 9 had history of post-abortal infections, and 38 had hysterosalpingography in the past. Three of them had 2, 3 and 4 hysterosalpingographies. 1 had pelvic abscess following H.S.G. In 2 cases culdoscopy was tried but failed and 2 cases had history of tuberculous cervical glands.

Table I shows the presenting symptoms of the 557 cases examined by laparo-

scopy and the 125 of them diagnosed to have P.I.D.

Table II shows the correlation of the clinical findings and laparoscopy findings.

Only 12 cases had significant results of investigations done prior to laparoscopy. In 9 cases the endometrial histopathology showed tuberculous endometritis. In 3 cases X-ray chest indicated old pulmonary tuberculosis.

Cases with frank tubercles and caseation were diagnosed definitely as pelvic tuberculosis. A good number of cases with hydrosalpinx or tubo-ovarian masses or thickening could not be easily distinguished from non-specific chronic inflammatory disease.

The tuberculous tubes are more rigid and seem to be fixed to the uterus and their shape is not altered by moving the uterus back and forth, whereas the normal or non-specifically inflamed tubes are usually more elastic.

'Blue uterus' corroborates but does not clinch the diagnosis of genital tuberculosis unless other findings are associated. Tuberculous atrophy of the endometrium could be the commonest but not the only cause of intravasation.

It is ultimately on the basis of collective data of laparoscopic findings, history

TABLE I
Presenting Symptoms

557 Cases Examined by Laparoscopy	125 Cases with Pelvic Inflammatory Disease	
	Tuberculous	Non-specific
Primary sterility	51	39
Secondary sterility	7	22
Chronic Pelvic Pain	4	15
Primary Amenorrhoea	8	—
Secondary Amenorrhoea	9	—
Scanty infrequent menstrual periods	6	5
Menorrhagia	1	2

Cases with more than one presenting symptom fall in more than one group.

TABLE II
Co-Relations of Clinical Findings to Laparoscopy Findings

	Blocked tubes		Tubes patent with de-layed spill		Hydrosalpinx		T. O. Masses		Adhesions			Blue uterus	
	Bilat	Unilat	Bilat	Unilat	Bilat	Unilat	Bil	Unil	DP	Omen-tal	Peri-tubal		
87 No abnormal findings	63	15	9	3	5	3	11	3	19	8	26	17	10
15 Unilateral tubo-ovarian masses	15	—	—	5	1	5	4	5	3	10	11	11	9
3 Bilateral tubo-ovarian masses	3	—	—	—	—	—	3	—	1	2	2	3	1
7 Tenderness in Fx's 2 of them with R. V. fixed uterus	3	3	1	2	3	2	2	2	2	3	2	2	2
9 Thickening in Fx. 3 with R. V. fixed uterus	6	3	—	1	4	1	2	3	2	3	2	2	2
4 Doughy abdomen	2	2	—	—	2	—	2	—	3*	2	3	3	2
125 Total	92	23	10	11	15	11	24	13	30	28	46	38	26

* Two of the cases had tubercles also on the peritoneum and intestines. There were some cases with hydrosalpinx on one side and tubo-ovarian mass on the other. Thickening of tubes, tubercles, caseation and adhesions were found with or without hydrosalpinx or tubo-ovarian masses. There was one case with ovarian cyst.

and clinical factors such as primary sterility, amenorrhoea, cervical gland scars, doughy abdomen and investigations such as endometrial biopsy and X-ray chest that a case was labelled as genital tuberculosis or non-specific P.I.D. Thus, 59 of 125 cases were diagnosed as tuberculous pelvic infection. None of these 125 cases had laparoscopic biopsy of the tube and histopathological examination.

Discussion

Pelvic inflammatory disease can present several problems for laparoscopy as omental adhesions due to inflammatory process or previous operations can make the procedure more difficult and complicated as well as restrict the view. The possibility of flare-up of the infections during the procedure particularly due to hydropertubation should be kept in mind. Post-operative antibiotics were therefore routinely given if the laparoscopic diagnosis was P.I.D.

Retroverted fixed uterus and adhesions in the pouch of Douglas made laparoscopy a more suitable procedure than culdoscopy particularly when P.I.D. is suspected. Federicsson (1974) has discussed the place of laparoscopy versus culdoscopy in the investigations of infertility. He has shown that the adhesions to the fallopian tubes and the pathological conditions in the upper pelvis were less frequently observed by culdoscopy than laparoscopy. Whereas more cases of endometriosis were found in the culdoscopy group as endometriosis is more often situated in the lower pelvis and in the underside of the ovaries. Coltart (1970) also mentions that the presence of endometriosis with or without tubal involvement is one of the most common unexpected findings on culdoscopy. However, as P.I.D. particularly of tuberculous nature is more

common than endometriosis amongst the infertility cases in this country, laparoscopy is a more suitable procedure.

Laparoscopy can reveal unsuspected P.I.D. and also disprove a case wrongly labelled as chronic pelvic disease. Eighty-seven of the 125 cases of P.I.D. had no abnormal clinical findings. Only 18 of the 37 tubo-ovarian masses were diagnosed by bimanual examination. It is evident that peritubal adhesions, tubercles on the tubes, small tubo-ovarian masses and hydrosalpinx cases cannot be detected clinically. On the other hand, chronic pelvic inflammatory disease was a common diagnosis in the past for the obscure and chronic lower abdominal pain and backache. Often surgical interferences were also performed, at times augmenting the complaints by further iatrogenic disturbances. A large number of cases with such complaints have been found to have normal findings on laparoscopic examinations. Frangenheim and Kleindinst (1974) have done laparoscopy for 302 women with complaints of chronic abdominal pain after careful history (including psychiatric history) and physical examination. Only 9.6% of the cases had some inflammatory process responsible for the pain, 9.93% more had adhesions in the lower abdomen and 1.32% had chronic peritonitis. Smith and Dillon (1970) also emphasize the value of laparoscopy in evaluation of pelvic pain and in the diagnosis of obscure pelvic pathology. Of 49 cases of chronic pelvic pain, 15 had normal findings. Of 33 cases pre-operatively diagnosed as chronic P.I.D., only 13 were confirmed to be so.

In this study of 557 laparoscopies, there were 49 cases with chronic lower abdominal pain. Of these only 19 had P.I.D.

Duignan and Jordan (1972) found that of 135 cases with chronic pelvic pain,

17 had adhesions from previous surgery and 11 had chronic P.I.D. As many as 62.2% had normal findings. Even in our series of 125 cases discussed above there were a large number of cases who had history of previous operative procedures. It is important to realise that considerable number of P.I.D.'s are iatrogenic. Abortions and D & C's, HSG's and laparotomies often repeated needlessly and when done without proper asepsis, seem to be responsible for a large number of cases. Two of the cases with non-specific P.I.D.'s were due to sterilisation operation, 1 having hydrosalpinx and the other a tubo-ovarian mass.

The incidence of P.I.D. in infertility cases would be influenced most by the incidence of pelvic tuberculosis in each country.

Bellina (1974) has analysed 324 cases of infertility as per laparoscopy findings. Eighty-four of them were due to chronic P.I.D. and 2 due to pelvic tuberculosis. Five were post-abortual salpingitis. Of 325 cases with primary infertility studied by Duignan and Jordan (1972) chronic P.I.D. with unilateral or bilateral block was found in 24.5%, whereas in 76 cases of secondary sterility 33.8% were found to have such pathologies. Only 2 of the 325 cases of primary sterility and none of the 76 cases of secondary sterility had pelvic tuberculosis.

During this study, of 316 cases of primary sterility, 51 had genital tuberculosis and 39 had non-specific P.I.D. Of 131 cases with secondary sterility there were 7 cases of genital tuberculosis and 22 of chronic P.I.D. This shows the high incidence of pelvic tuberculosis in this country compared to other countries and therefore the need for laparoscopy as a necessary prelude to tuboplasty. This

point is also emphasized by Seigler (1974).

Although we have not carried out any operative laparoscopy in this series there is a definite place for this procedure in chronic P.I.D.

Palmer (1969) removed peritubal adhesions in 72 patients during laparoscopy and 24 (33%) became pregnant. Three had tubal gestations. Ahlgren (1971) performed tubectomy by puncturing a small hydrosalpinx and then enlarging the opening and reported 3 pregnancies following such operative laparoscopy procedure on 12 patients. However, there is no place for such procedures in cases of pelvic tuberculosis. Where the tube is irreparably damaged, tubal biopsy for confirmation of tuberculous infection can be useful. However, unless several sections of the material are carefully examined, the diagnosis of tuberculosis can be missed.

It is worth noting that Mardh and Westrom (1971) have found laparoscopy very useful even in acute salpingitis. They have collected material for cultures and studied the microbiology of acute pelvic infections.

Though HSG can give supplementary information at times, by itself it often provides incomplete information. It is not unusual to find a normal HSG with peritubal adhesions and it is not very rare to find anatomical patency of the tubes with tubercles on the surface. The role that scopy plays in clinching the diagnosis and avoiding the unnecessary laparotomies is unique. In cases with suspected P.I.D. particularly, scopy is preferable to HSG, as it is better to avoid hydropertubation if pelvic organs looked congested and inflamed. However, in cases of rupture of the tube during the procedure, a proper visualisation for

haemorrhage is helpful. The authors recommend laparoscopy as the method of choice to study the condition of the fallopian tube.

Sheth and Krishna studied 100 patients of infertility subjected to hysterosalpingography and laparoscopy examinations. 74 patients had identical findings on both these investigations. Hysterosalpingography findings were misleading in 26 patients. Of these, 17 patients were found to have patent tubes on laparoscopy though diagnosed blocked radiologically. In 58 patients laparoscopy gave additional information.

Summary

557 cases with complaints of primary or secondary sterility, chronic abdominal pain and primary or secondary amenorrhoea were examined by laparoscopy. 125 cases of chronic pelvic inflammatory disease of both tuberculous and non-specific varieties were detected. 87 of the 125 cases had no abnormal clinical findings. Only 18 out of 37 tubo-ovarian masses were diagnosed by bimanual examination. Thickening of the tubes, peritubal adhesions, tubercles and caseation could be revealed only by laparoscopy.

Laparoscopy is, therefore, an invaluable tool for diagnosis of pelvic inflammatory disease. In this country there are a significant number of cases of silent genital tuberculosis and laparoscopy helps to bring these cases to light.

Acknowledgement

We are thankful to Dr. C. K. Deshpande, Dean, K.E.M. Hospital & Seth G.S. Medical College and Dr. V. N. Purandare,

Head of the Department of Obstetrics and Gynaecology, K.E.M. Hospital, for allowing us to present the hospital date. We also thank Dr. M. R. Narvekar, Dr. S. J. Joglekar and the staff of the Department for their kind co-operation.

References

1. Ahlgren, M.: Acta. Obst. & Gynec. Scand. Suppl. 9: 56, 1971.
2. Bellina, J. R.: Gynaecological Laparoscopy. New York, Stratton Intercontinental Medical Book Corporation. P. 177, 1974.
3. Coltart, T. M.: 'Laparoscopy in the diagnosis of tubal patency'. Obst. & Gynec. Survey. 25: 864, 1970.
4. Duignan, N. M., Jordan, J. A., Coughlan, B. M. and Logan, Edwards R.: "One thousand consecutive cases of diagnostic laparoscopy". J. Obst. & Gynec. Brit. C'wealth. 79: 1016, 1972.
5. Frangenheim, H. and Kleindienst, W.: "Gynaecological Laparoscopy" New York, Stratton Intercontinental Medical Corporation. 2: 43, 1974.
6. Fredricsson, B.: "Laparoscopy versus Culdoscopy in the investigation of infertility". Acta. Obst. & Gynec. Scand. 53: 125, 1974.
7. Mardh, P. A. and Westrom, L.: Obst. & Gynec. Survey, 26: 171, 1971.
8. Palmer, R.: Operative Laparoscopy. Communication at the Pacific Coast Fertility Soc. Meeting. Palm Springs 1969.
9. Seigler, A. M.: Gynaecological Laparoscopy. New York, Stratton Intercontinental Medical Book Corporation. P. 253, 1974.
10. Sheth, S. S. and Krishna, U. R.: Paper accepted for publication in the J. Obst. & Gynec. India.
11. Smith, B. D. and Dillon, T. P.: Obst. & Gynec. Survey. 25: 949, 1970.
12. Steptoe, P. C.: Laparoscopy in Gynaecology, Edinburgh, E. & S. Livingstone, P. 51, 1967.