

THE VALUE OF PELVICOSCOPY IN GYNAECOLOGY†

by

MOTASHAW NURGESH,* M.D., F.R.C.S., F.A.C.S.

KOTHARI MEENA,** M.B.B.S., D.G.O., D.F.P.

RAO MOHAN,*** M.B.B.S.

and

PENKAR SUBHASH,**** M.D., D.G.O.

Many a time the most detailed clinical examinations and elaborate hormonal or radiologic investigations fail to help the gynecologist in arriving at a correct diagnosis. The most logical solution to the diagnostic dilemma appears to be an exploratory laparotomy for a direct look at the pelvic organs. Pelviscopy is a procedure that could be looked upon as a visual exploration of the pelvic cavity without the burden of a regular laparotomy. We present here our experience with a series of 300 pelviscopies.

Historical Aspects

The procedure has gradually been evolved during the last 70 years. The historical details are well documented in many monographs. Suffice here to state that it was Ott of Petrograd who in 1901 first introduced the optical inspection of

the peritoneal cavity. Recent publications on the subject are those of Steptoe (1967), Fear (1968) Cohen (1968) Singler and Berenyi (1969) and Horwitz (1972).

Technique

General anaesthesia was employed. Induction was achieved during pentothal and scoline; an intratracheal tube was introduced. Anaesthesia was maintained with gas and oxygen and intermittent use of muscle relaxants. This is safe for the patient and provides good relaxation which is essential for the procedure. Semm's canula was introduced into the cervical canal and fixed there by vacuum. The cannula permits movements of the cervix to be carried out during pelviscopic examination. A fibre optic scope, a light source and a carbon dioxide gas pressure flow control system as devised by Semm were employed. Pneumoperitoneum was created by using a modified Verres insufflation needle.

Position of Patient

Extended lithotomy with a 30° Trendelenburg tilt.

The pelvic and suprapelvic organs were seen in a certain order and their physiologic or pathologic state noted. Tubal motility was studied and tubal

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From the Department of Obstetrics & Gynaecology, Seth G. S. Medical College and K.E.M. Hospital, Parel, Bombay-12.

* Prof. of Obst. and Gynec. Seth G. S. Medical College, Honorary Obst. and Gynec. K.E.M. Hospital.

** Postgraduate Student.

*** Postgraduate Student.

**** Senior Registrar.

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patency was assessed by using 1% methylene blue.

Indications

Table I gives the indications in the present series. It is obvious that infertility

TABLE I
Indications for Pelviscopy

		No. of cases
1. Infertility		158
a. Primary	103	
b. Secondary	55	
2. Abdominal pain		52
a. Acute	3	
b. Chronic	49	
3. Amenorrhoea		26
a. Primary	13	
b. Secondary	13	
4. Congenital anomalies and endocrinopathies		47
5. Laparoscopic sterilization		13
6. Miscellaneous		4
		300

constitutes the largest group and when combined with amenorrhoea, congenital anomalies and endocrinopathies, accounts for 77% of the cases.

For many years in our department it has been customary to commence infertility studies after an adequate history, physical examination and semen analysis, by an examination under anaesthesia, dilatation and curettage in the premenstrual phase of the cycle. We combined the latter procedure with pelviscopy. We thus obtained under one anaesthesia a fund of useful information during the course of the short hospital stay of 12 to 24 hours. The endometrium was obtained for examination. The uterus and tubes were visualized, tubal patency was assessed and if follicular rupture had occurred with the formation of a corpus

luteum, the same was identified.

According to Cohen, endoscopy is indicated in every infertile patient over the age of 30 or in any patient regardless of age who is infertile for 3 years or more.

The second important indication in this series was abdominal pain both acute and chronic, together numbering 52 cases.

There were 47 cases of congenital anomalies and endocrinopathies. These appear large in number in a total series of 300 cases, but most of them were referred to us for the explicit purpose of endoscopy.

Laparoscopic sterilization was done in 13 instances. This is a small number since it is the usual practice in our hospitals to do an abdominal sterilization in the puerperium and a vaginal sterilization in the non puerperal cases.

The other indications for which pelviscopy can be used are (a) for diagnosis of overt pelvic peritonitis, (b) before and after tuboplasty (c) for evaluation of the effects of drugs, especially those used in stimulating ovulation and the control of malignant disease and (d) for ancillary surgical techniques such as ovarian biopsy, aspiration of cyst or lysis of adhesions.

Table II shows the findings in the infertile group. In 71 instances the pelvic findings were normal. This enabled one to emphatically assure the patient, and at the same time look elsewhere for the solution of her problem. Tubal pathology was found in 34 instances. Peritubal adhesions, unilateral or bilateral hydrosalpinx, fimbrial or cornual block, tubo-ovarian swelling, and partial or complete absence of the tubes due to previous surgery were noted. In 6 instances, it gave us the opportunity of a second look where previously unfruitful laparo-

TABLE II
Pelviscopic Findings in Infertility Patients

	No. of cases*
1. Normal pelvic findings	71
2. Tubal pathology	34
3. Genitoperitoneal tuberculosis	9
4. Unsuspected endometriosis with or without fibromyomata	11
5. Fibromyomata	8
6. Congenital anomalies and endocrinopathies	5
7. Syndrome of polycystic ovary	7
8. Pelvic adhesions	12
	157

* In one case of infertility pelviscopy failed due to the presence of adhesions.

tomy had been done, thus obviating repeat major surgery. Genitoperitoneal tuberculosis was found in 9 instances. Endometriosis is not often diagnosed and the possibility of it is a speculation. With the pelviscope it is possible not only to verify its existence but to see the extent of it and to treat some of the deposits by cauterisation. Fibromyomata are easily seen, their size accurately determined and the decision to operate or leave them alone confirmed.

Table III shows the findings in the patients with abdominal pain. Three patients with acute abdominal pain were scoped. In 2 instances the clinical diagnosis of ectopic gestation was confirmed and an immediate laparotomy done. In the third case the patient complained of acute abdominal pain and a twisted ovarian cyst was diagnosed; at pelviscopy a functional cyst of the ovary was found and thus laparotomy was avoided. Patients with chronic abdominal pain where the diagnosis was uncertain were scoped. In 12 instances, the pelviscopic findings were normal, in 5 instances abdominal

TABLE III
Pelviscopic Findings in Patients with Abdominal Pain

	No. of cases*
1. Acute abdominal pain	3
Functional cyst	1
Ectopic pregnancy	2
2. Chronic abdominal pain	44
Normal findings	12
Abdominal tuberculosis	5
Ectopic pregnancy	5
Tubo-ovarian mass	5
Ovarian cyst	6
Fimbrial cyst	2
Haemorrhagic corpus luteum	1
Pelvic adhesions	5
Omental adhesions	2
Bicornuate uterus with pregnancy	1
	47

* Five other patients with abdominal pain are included elsewhere.

tuberculosis was diagnosed. Two of these patients had moved from hospital to hospital, had the routine of stool examination and a radiographic study of the gastrointestinal tract done repeatedly. Scopy revealed frank tuberculosis and within a few weeks of anti Koch's treatment the symptoms were relieved.

The last case in Table III is interesting. She came with 10-12 weeks' amenorrhoea and abdominal pain; vaginal examination revealed an enlarged uterus with a soft swelling in the right fornix, diagnosed as an ovarian cyst. At pelviscopy the soft swelling was one horn of a bicornuate uterus and not an ovarian cyst; a laparotomy was thus avoided.

Correlation of clinical diagnosis and pelviscopic diagnosis is shown in Table IV. Eighteen patients had chronic ab-

TABLE IV

Correlation of Clinical Diagnosis and Pelvicoscopic Diagnosis in Abdominal Pain

Clinical diagnosis	No. of cases	Laparoscopic diagnosis	No. of cases
<i>Acute abdominal pain</i>			
1. Twisted ovarian cyst	1	Functional cyst	1
2. Ectopic pregnancy	2	Ectopic pregnancy	2
<i>Chronic abdominal pain</i>			
1. Unexplained pain	18	Normal findings	10
		Abdominal tuberculosis	4
		Ectopic pregnancy	1
		Tubo-ovarian mass	1
		Fimbrial cyst	1
		Omental adhesions	1
2. Chronic or subacute ectopic pregnancy and tubo-ovarian swelling	11	Normal findings	1
		Abdominal tuberculosis	1
		Ectopic pregnancy	4
		Tubo-ovarian mass	3
		Pelvic adhesions	1
		Haemorrhagic corpus luteum	1
<i>B.</i>			
3. Ovarian tumour	10	Tubo-ovarian swelling	1
		Ovarian cyst	5
		Fimbrial cyst	1
		Bicornuate uterus with pregnancy	1
		Pelvic adhesions	2
4. Pelvic infection	4	Ovarian cyst	1
		Pelvic adhesions	3
5. Ascites due to cirrhosis of liver	1	Abdominal tuberculosis	1

dominal pain where the clinical findings defined a sure diagnosis. In these cases pelviscopy is of the greatest value. In 10 instances the pelvic findings were normal. This knowledge itself is reassuring both to the patient and the physician. Abdominal tuberculosis was present in 4 cases. A slow leaking ectopic, a fimbrial cyst, a tubo-ovarian swelling, and omental adhesions were found in 4 other cases, where no definite diagnosis had been possible on palpation. In 11 instances where a clinical diagnosis of subacute or chronic ectopic pregnancy or tubo-ovarian mass was made ectopic gestation was found in only 4 instances. In

one case there was abdominal tuberculosis, three had a tubo-ovarian mass, one had pelvic adhesions and one had a haemorrhagic corpus luteum. Similarly, where a diagnosis of ovarian tumour was made in 10 cases, pelviscopy confirmed the same in only 5 instances, and where pelvic infection was the clinical diagnosis, an ovarian cyst was found at pelviscopy. In the last case, cirrhosis of the liver with ascites was the clinical diagnosis. Pelviscopy revealed frank abdominal tuberculosis, obviously a condition amenable to treatment.

Seventy-three patients presented with amenorrhoea. They have been classified

as per the pelviscopic findings into several groups as shown in the following tables.

Table V shows the findings in 26 cases of amenorrhoea. Abdominal tuberculo-

TABLE V

Pelviscopic Findings in Cases of Amenorrhoea

	No. of cases
1. Normal findings	13
2. Abdominal tuberculosis	8
3. Pelvic infection	3
4. Tubo-ovarian mass	2
	26

sis was present in 8 cases, pelvic findings were normal in 13, pelvic infection was present in 3 cases, and tubo-ovarian mass in 2 cases. Pelviscopy has made an invaluable contribution to the diagnosis of congenital anomalies and endocrinopathies as shown in Tables VI, VII, VIII,

TABLE VI

Pelviscopic Findings in Patients with Congenital Anomalies of the Mullerian Duct System

	No. of cases
1. Mullerian agenesis	3
2. Absent uterus with poorly developed tubes	1
3. Infantile uterus with noncanalised tubes	1
4. Absent vagina with Mullerian agenesis	7
Rudimentary uterus with poorly developed tubes	1
Unicornuate uterus with single ovary	1
Infantile uterus	2
Tuberculosis	1
	17

TABLE VII

Pelviscopic Findings in Patients with Endocrinopathies

	No. of cases
1. Ovarian dysgenesis	13
2. Sclerocystic ovary	7
	20

TABLE VIII

Pelviscopic Findings in the Patients with Endocrinopathies and Congenital Anomalies

	No. of cases
1. Ovarian and Mullerian agenesis	1
2. Ovarian dysgenesis with Mullerian agenesis	9
Rudimentary uterus with poorly developed tubes	1
Rudimentary uterus	2
Infantile uterus	2
	4
	10

where the exact diagnosis would otherwise require a series of investigations and a laparotomy.

The next Table IX shows the advantages of pelviscopy.

TABLE IX

Advantages of Pelviscopy

1. Quick early and definite diagnosis
2. Avoidance of laparotomy
In present series—30 cases
3. Diagnosis of abdominal tuberculosis
4. Diagnosis of endometriosis

Complications

Many large series of laparoscopies have been reported without a serious complication. The dangers are similar to those of paracentesis. Theoretically hemorrhage, shock, embolism, peritonitis, per-

foration of a hollow viscus, surgical emphysema, wound infection and wound haematoma are all possible. In most series, the major complication rate is 2%. In our series it was 0.30%. Death occurs in 1 in 1000 cases. The mortality from gynaecological surgery is higher than the above. Pelviscopy is safer than laparotomy regarding morbidity and mortality. In our series we had a few complications as shown in Table X.

TABLE X
Complications of Pelviscopy

	No. of cases
I. Failure to visualise properly due to adhesions	4
II. Surgical emphysema	1
III. Haematoma of the abdominal wall	1
IV. Intestinal Perforation	1
Mortality—Nil	

Contraindications

1. Patient with cardiac or respiratory insufficiency.
2. Large myoma, immediate postpartum uterus, large ovarian cyst and any large abdominal tumour.
3. Intestinal distention.
4. Disseminated peritoneal metastases or haemorrhagic shock.
5. Previous abdominal operation is a relative contraindication. Thirty-two of our patients had one or more previous laparotomies.

Discussion

Those who have had pelviscopic views of the peritoneal cavity are aware of the breath-taking panoramic view it can provide of the pelvic and suprapelvic organs. It would not be an exaggeration to say that the visual experience is thrilling. It is imperative that a pelviscopist must

have a thorough knowledge of the gross anatomy and the pathology of the various organs for the proper interpretation of the findings. Pelviscopy is a brief procedure lasting 10-30 minutes. The patient is admitted on the same or the previous day, and discharged 6 hours after the procedure or on the next day. The economy of effort that it provides is two-fold; the patient is spared a major procedure of regular laparotomy, and the hospital bed is not occupied for more than 12-24 hours. Pelviscopy is a safe procedure in experienced hands. Its cost may prohibit its use in private practice, but the instruments can easily be acquired and used by all public institutions.

A comparison of pelviscopy and culdoscopy may be made here. The two procedures are often looked upon as competitive. The truth is that they are complementary, the former providing a view from above and the latter from below. The outstanding advantage of culdoscopy is that it is most often done under local anaesthesia. Some workers use the pelviscope under local anaesthesia, with attendant limitations. Culdoscopy provides visualisation of only the tips of the fallopian tubes, the surfaces of the ovaries and the posterior wall of the uterus. The view at pelviscopy resembles that seen at laparotomy. All surfaces of the uterus, the cul-de-sac, uterosacral ligaments the entire length of the fallopian tubes and ovaries may be visualized. Culdoscopy is not possible in cases with fixed retroversion, cul-de-sac mass, prior colpotomy with extensive scar formation, absent or rudimentary vagina, vaginitis, children and virgins and where the knee-chest position is contraindicated.

Summary

A clinical study of pelviscopy in 300

gynecological cases is presented. The indications, contraindications, and complications are discussed. A comparison of pelviscopy and culdoscopy is made. The role of pelviscopy as a diagnostic and a therapeutic tool is emphasized.

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