

## OPERATIVE LAPAROSCOPY—A PRELIMINARY STUDY

by

S. D. KHANDWALA,\* M.D., F.R.C.S.

### Introduction

The scope of laparoscopy is expanding as more and more experience is gained. The widening horizons of laparoscopy now encompass vast vistas in laparoscopy viz. diagnostic laparoscopy, diagnostic procedures, laparoscopic sterilisation, operative laparoscopy and laparoscopy for research.

Operative laparoscopy envisages several surgical procedures for treating some pathological conditions diagnosed at laparoscopy. These surgical procedures are carried out as an extension of the diagnostic laparoscopy procedures, using various accessories, thus obviating the need of a subsequent laparotomy.

This paper presents a preliminary study of 30 cases of operative laparoscopy done in the author's private hospital. They account for a small fragment (0.9%) of the 3,340 laparoscopies done personally.

### Technique

All these cases of operative laparoscopy were done under local anaesthesia and premedication with pethidine (50 mgms. I.M. 1 hour before and 50 mgms. I.V. at surgery) and diazepam (5 mgms. I.M. 1 before and 5 mgms. I.V. at surgery). Atropine 0.6 mgm. I.V. is administered at surgery. About 10 to 20 ml. of 1% Xylocaine is also sprayed on the pelvic organs and adhesions, etc. through a poly-

thelene tube passed in the operating channel of the operating laparoscope. Almost all workers however use general anaesthesia.

The technique of laparoscopy is the one described by us (Khandwala and Pai 1975) using a single puncture operating Jacob-Palmer laparoscope (10 mm.) Occasionally, a second puncture is made for added manipulation. Most authors (Frangenheim 1972, Gomel 1977, Palmer, Esposito 1977, Semm 1977) prefer to use a double or triple puncture technique for operative laparoscopy.

Several accessories such as Palmer grasping forceps, Palmer biopsy forceps, scissors, probe, polythelene tubes for spraying local anaesthesia and suction etc. are used either through the operating channel or through the second puncture cannula. All these instruments are insulated, so that electrocoagulation can be carried out. The standard unipolar electrocautery unit at a low wattage (40 to 50 watts) is used for electrocoagulation.

### Operative Procedures

The various operative procedures that may be performed at laparoscopy are as follows:

1. Adhesiolysis.
2. Ovarian Cyst—Aspiration and removal.
3. Fulguration of endometrial implants.
4. Removal of extrauterine IUD.
5. Partial salpingectomy for ectopic tubal pregnancy.

\*Dr. Khandwala's Hospital, Prarthana Samaj, Bombay-400 004.

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6. Resection of uterosacrals.
7. Dilatation of phimotic fimbrial end.
8. Salpingostomy.
9. Wedge resection of ovary.
10. Ventral suspension of the uterus.

The operative procedures performed by the author are indicated in the accompanying Table:

TABLE  
*Operative Laparoscopies: 30 Cases*

Procedure	No. of cases	%
1. Adhesiolysis	20	66%
2. Aspiration of ovarian cyst	3	10%
3. Fulguration of endometrial implants	2	6.6%
4. Removal of IUD	2	6.6%
5. Partial salpingectomy	2	6.6%
6. Resection of uterosacrals	1	3.3%

#### 1. Adhesiolysis: (20 cases—66%)

This may vary from division of a few flimsy adhesions to extensive adhesiolysis in the pelvis. In 11 cases (36.3%), there were a few veil-like thin, mostly avascular adhesions and bands between the tubes, ovaries, uterus and pouch of Douglas. These could be readily separated by the grasping forceps without the need of any electrocoagulation. In a few of these cases, there were bands between the tubes and the uterus, kinking the tubes which could be readily divided, thus freeing the tubes.

In 9 cases (29.7%), there were moderate to extensive adhesions in the pelvis. In 5 cases (16.7%) there were extensive, thin, veil-like adhesions in 3 to 4 layers surrounding the tubes and ovaries and in the pouch of Douglas. In 3 cases (10%) there were extensive omental adhesions to the uterus and adnexae, following previous pelvic surgery. In 1 case (3.3%),

there were adhesions around the tube and small intestine was adherent to the myomectomy scar. In all these cases the adhesions were separated slowly and meticulously, coagulating the blood vessels where necessary. The grasping and biopsy forceps were very useful in breaking the adhesions. It was possible to clear the pelvis of all the adhesions in these cases. Saline was used to wash out the collected blood through a polythelene tube. Dexamethasone 8 to 16 mgms. in 25 ml. of normal saline was instilled in the pelvis over raw areas to minimise the risk of adhesions reforming. Subsequently, hysterotubal hydrotubation with hydrocortisone acetate was done repeatedly.

#### 2. Aspiration of Ovarian Cyst: (3 cases—10%)

In 3 cases, a small ovarian cyst 3 to 5 cms. in diameter was aspirated by using a Verres' needle passed suprapubically. The fluid in 2 cases was clear serous and in 1 case was chocolate colored. This was done in addition to adhesiolysis in 2 cases.

#### 3. Fulguration of Endometrial Implants: (2 cases—6.6%)

In these 2 cases, there were small islands of endometriosis in the region of uteroscral ligaments. They were electrocoagulated carefully as ureter is very close by. Early diagnosis of endometriosis and its treatment is one of the useful achievements of laparoscopy.

#### 4. Removal of IUD: (2 cases—6.6%)

Both these cases were of Lippes loop which were lying extrauterine, partly embedded in the omentum. They could be picked up by the grasping forceps and pulled free from the omentum and then



withdrawn with the telescope through the 11 mm. cannula.

5. *Partial Salpingectomy*: (2 cases—6.6%)

(a) *Ectopic gestation*: (1 case—3.3%)

One case taken up for menstrual regulation and laparoscopic sterilisation was found to have an unruptured tubal pregnancy in the left tube 2 cms. from the cornu. In this case, the mesosalpinx and tube on either side of the gestation sac was electrocoagulated and the gestation sac was also electrocoagulated and then tube bearing the gestation was excised and removed with the telescope through the 11 mm. cannula.

(a) *Failed Hulka Clip: Tubal Sterilisation*: (1 case—3.3%)

This case was a failure of Hulka Clip. Vacuum aspiration was done to remove the pregnancy. At laparoscopy, both the Hulka Clips were found to be well applied across the tubes. The tube and the mesosalpinx on either side of the clip was electrocoagulated and then the part of the tube with the clip was excised. Hemostasis was checked. The tubal segment with the clip was removed after a little manipulation through the 11 mm. cannula. Same procedure was repeated on the opposite tube. This produced effected sterilisation also.

(6) *Resection of Uterosacrals*: (1 case—3.3%)

This was a case of chronic pelvic pain. At laparoscopy, the uterosacral ligaments were found to be hypertrophied. These were electrocoagulated and cut with extreme care because of the proximity of the ureter, the uterine vessels and the rectum.

### Discussion

Operative laparoscopy requires great dexterity and extensive experience in laparoscopy and a wide array of accessory instruments. But it is a great boon to the patient as it avoids a laparotomy.

Adhesiolysis is the commonest surgery (66%) done. Semm (1977), Gomel (1977) and Frangenheim (1972) describe in detail the various techniques of adhesiolysis. Semm (1977) especially prefers to use low voltage endocoagulator for coagulation and a hook scissors for dividing. Palmer breaks the adhesions using a grasping forceps. Extensive adhesiolysis is a very painstaking procedure.

Aspiration of small ovarian cysts (3 cases—10%) is also recommended by Frangenheim (1972) as 60% of these will not fill up again. Semm (1977) describes a procedure of resection of small ovarian cysts, including chocolate cysts, after initial aspiration. This is carried out by using the punch biopsy forceps and electrocoagulation. Frangenheim (1972) suggests that small cysts after aspiration can be removed after the pedicle is cauterised and divided.

Removal of extrauterine IUD has become a very important indication of operative laparoscopy. Israel (1977) and Cibil (1975) describe procedures for removing the same. It is necessary to determine the exact location by X-Rays, both A.P. and lateral views with Hulka tenaculum-cum-sound in utero. The IUD tends often to be rolled up in the omentum. The Lippes loop and other plastic devices are easier to remove. The copper devices produce dense adhesions and may cause difficulty in removing or need laparotomy.

Unruptured tubal pregnancies are being diagnosed more often because of



laparoscopy. It is also possible to remove them at laparoscopy. Esposito (1977) describes the various techniques of doing the same viz. (i) electrocoagulation and excision which was used in the case mentioned herein and (ii) electrocoagulation only when gestation sac is 1.5 cm. or less. Soderstorm (1975) has removed 5 tubal pregnancies using his snare technique.

Dilatation of phimotic fimbrial end using a grasping forceps has been described by Gomel (1977) and Semm (1977), Gomel (1977) also describes a technique of terminal salpingostomy in a case of small hydrosalpinx. Palmer (1977) is very enthusiastic about taking large single biopsy or multiple small biopsies in cases of polycystic ovaries with 20% pregnancy rate. Marik (1977) describes the technique of uterine suspension, which is nothing else but an exercise in "surgical Gymnastics".

#### Conclusion

Operative Laparoscopy is slowly but surely finding a place in modern gynaecological surgery. It needs dexterity, ingenuity and experience on the part of the gynaecologist as well as sophisticated armamentarium. The benefits it confers on the patient are substantial. However, it is incumbent upon the physician to decide in each instance whether the hazard of operative laparoscopy is offset by its benefits to the patient. The field of operative laparoscopy has immense scope. But the watch word of operative laparoscopy should be "Enthusiasm tempered with caution".

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