

LAPAROSCOPY IN PREVIOUS ABDOMINAL SURGERY

by

L. N. CHAUHAN, R. V. BHATT, M. N. HAZRA AND MITA RATHOD

SUMMARY

Previous abdominal surgery (PAS) has been considered a relative contraindication for laparoscopy. This study quantifies the surgical and technical problems with its complications/complaints.

One hundred and eleven cases were analysed with mean age and parity of 28.89 and 2.45 respectively. The laparoscopic sterilization was done in 77 cases (69.37%) and diagnostic laparoscopy was performed in 34 cases (30.63%) either under local anaesthesia with sedation (62.16%) or under general anaesthesia (37.84%).

The common abdominal scars were of caesarean section (50.45%), appendectomy (16.22%) and laparotomy (11.71%) for pelvic pathology. The places of scars were in lower midline (80.18), right para-median (9.91%), Pfannenstiel (5.41%), MacBurney's point (6.31%) etc. Fifteen patients (13.51%) had more than one scar.

There was 1 technical failure due to adhesions, while in 1 case rings could not be applied. Minor difficulties of adhesions and visualizations were present in 30.63% which were overcome without much difficulties.

There were no complications immediately or in early follow-up. This study suggests that PAS should not be considered as absolute contraindication for laparoscopy.

Introduction

Laparoscopy is used widely for female sterilization in India. There are some inherent complications in closed laparoscopy as against open laparoscopy. At present closed laparoscopy is performed in most of the centres. It is true that closed laparoscopy is a blind procedure in the sense that the operator is not able to see the structures while piercing the

Verres needle or passing the trocar. It is believed that previous abdominal surgery is likely to produce more intraperitoneal adhesions and occasionally intestines may be adherent to the abdominal scar. Therefore, there is reason to believe that previous abdominal surgery may increase the complication rate in laparoscopy. Previous abdominal surgery is considered as a relative contraindication for laparoscopy. There is fear that if laparoscopic procedures are performed in far away places as in laparoscopic camps for female sterilization, previous abdominal surgery may add to the risk in

From: Department of Obstetrics & Gynaecology, Medical College, Baroda and S.S.G. Hospital, Baroda.

Accepted for publication on 10-7-86.

places where facilities for immediate laparotomy do not exist. The purpose of the present study is to evaluate the risks involved and the difficulties encountered in performing laparoscopic procedures in patients with previous abdominal surgery.

Material and Methods

We studied 111 patients who came for laparoscopy who had previous abdominal surgery. The laparoscopic camps provided 36 cases to us, 53 cases were from Shri Sayaji General Hospital and 22 cases were from private nursing home. These cases were studied from January 1983 to May, 1986. Laparoscopic sterilization was performed in 77 cases and 34 cases were for diagnostic purpose. All these patients were properly examined and assessed by the operating surgeon. Careful records were kept of difficulties and complications that occurred during the procedure. Difficulty in proper visualization of the organs was also noted. The patients were kept under observation and all were followed up in the post-operative period.

Observation

In 111 cases, there was one male patient who needed laparoscopy to look for any secondaries in the abdomen. Earlier he had undergone surgery for umbilical growth. The mean parity among cases who came for sterilization was 2.45. The mean age was 28.89 years. Among the cases for diagnostic laparoscopy, 28 were for primary or secondary infertility, whereas in 4 cases there was clinical suspicion of ectopic gestation and 1 case had unexplained pain in abdomen (Table I). The most common previous abdominal surgery in our series was caesarean section (50.45%). Other cases

of PAS were appendectomy (16.88%) tubo-ovarian mass, tuboplasty, myomectomy, ventral suspension, tubal ligation, ectopic pregnancy, rupture uterus, arrow injury, cholecystectomy etc. (Table II-B).

TABLE I
Procedures

(A) Laparoscopic Ring	
Application	77 (69.37%)
Interval Cases	49 (44.14%)
Concurrent Cases	19 (17.12%)
Postpartum Cases	08 (07.21%)
Antenatal Case	01 (00.9%)
(B) Diagnostic Laparoscopy	
Infertility	28 (25.23%)
Ectopic	04 (03.60%)
Pain in Abdomen	01 (00.9%)
Secondaries in abdomen (Male)	01 (00.9%)

We also studied the site of scar of previous surgery. It was subumbilical mid-line vertical in 80.18% cases, paramedian in 9.91% cases, MacBurney's incision in 6.31% cases (Table II). MacBurney's incision is very much away from the site of incision for laparoscopy and hence is less likely to produce complications. Only one abdominal scar was present in 96 cases (86.49%), while 13 cases (11.7%) had two scars. Two cases (1.80%) had three scars on the abdomen (Table II-A).

Local anaesthesia with sedation was used in 69/77 cases of laparoscopic sterilization with falope ring. General anaesthesia was given for all diagnostic laparoscopies (34 cases) and for 8 cases of laparoscopic sterilization.

On clinical examination, pathology was suspected in 10 cases (9.01%). Difficulties in visualization was encountered in 34 cases (30.63%) (Table III). Omentum was adherent to the abdominal scar

TABLE II (B)
Type and Site of Scars

	Lower Mid Line	Rt. Para Median	Trans verse	Mac- Burney's	Others	Cases	Total %
L.S.C.S.	53	01	02	—	—	56	50.45
Appendectomy	03	08	00	07	00	18	16.22
*Laparotomy	17	01	01	00	00	19	17.12
Conventional T.L.	10	00	00	00	00	10	9.01
**Others	05	02	03	00	01	11	9.91
Total No. of Cases	88	12	06	07	01	114***	
% of Cases	79.28	10.81	5.41	6.31	0.90		

* Laparotomy includes cases of pelvic pathology ectopic pregnancy, rupture uterus, hysterotomy, cholecystectomy, tubal reconstruction.

** Others include ventral suspension, myomectomy, Lap. TL, umbilical growth, umbilical hernia repair, arrow injury etc.

*** Three cases had scars at two different sites.

TABLE II (A)
No. of Scars

Single Scar	96 (86.49%)
Double Scar	13 (11.71%)
Tripple Scar	02 (01.80%)
Total	111 (100%)

or to the uterus, tubes and round ligament in 34 cases. We made a window in the avascular area of omentum and passed the laparoscope through this window. This helped us in better visualization of

pelvic structures. The adnexa could not be visualized in 1 case which ultimately turned out to be a case of genital tuberculosis on endometrial biopsy study. It was possible to separate the omental adhesions and visualise the tube and ovary in most of the cases. After some manipulations with uterine manipulator and using the laparoscope to break filmy adhesions, it was possible to apply falope ring as planned in all but 1 case of female sterilization. The fallopian tube was thickened in 1 case but it was slowly

TABLE III
Abnormal Pelvic Findings and Surgical Difficulties

Abnormal pelvic pathology (Clinically suspected)	10	(9.01%)
Laparoscopic abnormality	34/111 cases	(30.63%)
in Lap. TL	19/77 cases	(24.68%)
in Diag. Laparoscopy	19/111 cases	(17.12%)
	15/34 cases	(44.12%)
	15/111 cases	(13.50%)
Rings could not be applied	01 case	(00.9%)
Failed Pneumoperitoneum	01 case	(00.9%)

milked and finally the falope ring could be applied on the tube. There was no difficulty in diagnosing ectopic pregnancy in all the 4 suspected cases. In cases of infertility, the cause of infertility could be found at laparoscopy. The previous scar did not interfere significantly with proper assessment of tubal factor.

There was no bowel injury or injury to the blood vessel in the present series. All patients were discharged on the same day.

Discussion

The reason why previous surgery is considered a relative contraindication for laparoscopy is because of the possible risk of injury to bowel or blood vessel. The injury could be caused while passing either Verres needle or trocar and sleeve. The tongs of the ring applicator may also cause injury. Other reason for avoiding cases with previous surgery is the possibility that the planned procedure cannot be carried out. There is no doubt that the risk does exist in cases who have previous abdominal surgery. However, with due care and precautions, it is possible to reduce the risks. The site for passing Verres needle may have to be changed depending on the site of the scar. We find that passing the Verres needle supraumbilically in the midline in all cases with midline subumbilical scar helps in reaching peritoneum without risk of injury to bowel or omentum. The mobility of Verres needle is reduced because of adhesions and hence it is difficult to judge whether the needle is in the peritoneal cavity or not. One should inflate the peritoneum slowly and look for uniform distension of abdomen with gas. The surgeon should carefully monitor the pneumoperitoneum. The

amount of gas should be a little more than is used in normal cases. This is to avoid injury. While passing the trocar, its direction should be away from the scar site. The passage of the trocar should be slow and deliberate. Further entry of trocar must be stopped as soon as the surgeon feels that he has pierced the peritoneum. If the woman has a bad scar or history of long hospital stay or wound infection, one should be very cautious while doing laparoscopy. If there are more than one scars on the abdomen, it would increase the chance of adhesions and hence greater operative risk. Cunanan *et al* (1986) reported incidence of PAS as 20.3% (1019 out of 5018 subjects). Out of 1019 PAS, 2.3% had PAS more than once. Procedure could not be performed in 6 cases (0.59%) of PAS. Four cases (0.39%) required laparotomy due to PAS. Chi (1983) reports that 11.33% of American women coming for laparoscopy have previous abdominal surgery. Prasad (1985) had unsuccessful laparoscopy in 6 out of 14 cases of previous abdominal surgery. Chi (1983) reports that the complication rate for laparoscopy in cases with previous abdominal surgery was twice as high as compared to cases without previous surgery. However, they reported no difficulty or complication in falope ring application in 29 cases with previous abdominal surgery.

Conclusion

The present study shows that patients for laparoscopy who have previous abdominal surgery need careful attention. There is the added risk of pneumoperitoneum or chance of bowel or vessel injury because of adhesions. But with reasonable care and precautions, it is possible to avoid these complications.

There may be difficulty in proper visualization in some cases because of adhesions. However it yields adequate information to decide further management in such cases. In our series we did not have more complications in cases with previous surgery. A surgeon well trained in laparoscopy technique should undertake performing laparoscopy in cases of PAS even in camp setting.

References

1. Chi, I. C., Feldblum, P. J. and Balogh, S. A.: Am. J. Obstet. Gynec. 145: 841, 1983.
2. Cunanan, R. G., Courey, N. G. and Lippes, J.: Obstet. Gynec. 155: 501, 1980.
3. Prasad and Jha, R. N.: J. Obstet. Gynec. India, 35: 343, 1985.

[Faint, illegible text, likely bleed-through from the reverse side of the page.]

[Faint, illegible text, likely bleed-through from the reverse side of the page.]

TABLE I

Table with 4 columns: Case No., Age, Duration, and Outcome.

Case No.	Age	Duration	Outcome
1	25	1 year	Resolved
2	30	6 months	Resolved
3	28	9 months	Resolved
4	32	1 year	Resolved
5	27	8 months	Resolved

[Faint, illegible text, likely bleed-through from the reverse side of the page.]