

Laparoscopic Myomectomy-Safety and Efficacy

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Summary: Laparoscopic myomectomy was done in 215 women in the age group of 20 to 49 years. A total of 361 myomas were removed. The indications were infertility in 124 patients, abdominal pain & backache in 46, menorrhagia in 19 and repeated abortions in 12. The duration of procedure ranged from 60 to 240 minutes with a mean of 94 minutes. The duration of hospitalization was 24 to 48 hours. Majority of the patients (142) had single myoma. Myomas were morcellated and removed through secondary trocar in 156 cases. Fifteen patients had mild wound infections. There was no major postoperative complication except one patient had evidence of mild intraabdominal bleeding which was treated conservatively. We conclude that laparoscopic myomectomy is safe and therapeutically effective.

Introduction

Fibroids are the commonest solid pelvic tumours. At least 30% of all women are estimated to have leiomyomas during their lifetime and 80% of them are asymptomatic (Parker 1995). Treatment of symptomatic women is based on patients wishes for further child bearing and the severity of symptoms and signs. Myomectomy is traditionally performed through laparotomy. Recently surgical techniques and instrumentation have been developed that allow myomectomy through operative laparoscopy (Semm and Mettler 1980).

Patients and Methods

Between June 1993 and May 1997, 215 women in the age group of 20 to 49 years underwent laparoscopic myomectomy. The indications were infertility in 124, abdominal pain and backache in 46, menorrhagia in 19 and repeated abortions in 12. Table 1 summarizes the indications.

The myomas were diagnosed by the clinical examination and ultrasonography. Few cases were diagnosed incidentally during laparoscopy performed either for infertility or abdominal pain. Hysteroscopy showed submucous myomas in 14 cases. The myomas on ultrasound measured between 2-12 cm. Uterus of more than 16 weeks pregnancy size were not selected for laparoscopic myomectomy. When the number of myomas were more than 6, myomectomy was not attempted laparoscopically. Pre operative investigations included routine blood, urine and ultrasound examination. Blood

was kept ready for transfusion in anaemic patients only. Pre-operative treatment with GnRH was not given for any patient.

All cases were done using a video endoscopic system (Karl Storz) under general anesthesia. A 3-puncture technique was used. The primary 10-mm trocar for the telescope was placed infraumbilically, but when the fibroid was more than 12 weeks it was placed 3-4 cm above umbilicus for a good panoramic vision. The secondary trocars were placed in the imaginary Pfannenstiel incision line. The left 6mm trocar was placed lateral to inferior epigastric and right 10mm trocar placed medial to the inferior epigastric as a matter of convenience. When myomas were large, the secondary trocars were placed 3 to 4 cm above the usual sites. For pedunculated myomas, the pedicle was coagulated with bipolar and transected with scissors or a unipolar needle. Bleeders were coagulated with bipolar forceps. In the early part of study inj. Vasopressin was used as a vasoconstricting agent for myomectomy. Myometrium was incised vertically in majority of the cases. The vertical incision produces less bleeding as well as it gives better orientation for endosuturing. Tunneling incisions were avoided, as it was difficult to attain haemostasis. A 10mm claw forcep or myoma screw was used to hold the myoma, while a suction irrigation or grasping forceps was used to enucleate the myoma. All large blood vessels were coagulated with unipolar or bipolar. The myomas were morcellated with Semm's myoma punch in the early part of the study. Since 1996, Steiner's electromechanical morcellator was used instead of the mechanical one. It is a very effective and time saving equipment for myoma

morcellation. Myomas were removed through colpotomy incisions, when morcellation was difficult or morcellator was not available.

Broad ligament myomas were removed after identifying major vessels and ureter. An oblique incision was made on the bulging portion of the myoma. Myoma was slowly enucleated taking care to avoid injury to vessels. Defect in the broad ligament was not sutured. When haemostasis was incomplete a Vario drain was inserted through one of the suprapubic trocar sites and the patient monitored postoperatively. Drain was removed after 12-24 hours.

Laparoscopic assisted myomectomy is done when myomas were multiple and more than 5cm in size. After making an incision over the myoma it is firmly grasped with a 10mm claw forceps or myoma screw. It is then partially enucleated. Laparoscopic procedure is temporarily stopped and the abdominal wound around the trocar holding the myoma is enlarged to 3-4cm. The myoma is pulled up to skin wound. Myoma is now held with a towel clip after removing the myoma screw and morcellated using a 11 number blade. Morecellation is done in small steps so that the myoma of any size can be removed through the 3-4cm incision. Before completely detaching the myoma, myometrium is held with Allis forceps and it is sutured in layers with a 2-0 vicryl. The detailed technique is described elsewhere (Paul 1998). In 16 cases other surgical procedures like adhesiolysis, coagulation of endometrial implants, cystectomy, follicular puncture, hysteroscopic cannulation and septum incision were done.

Results

A total of 361 myomas were removed laparoscopically from 215 women included in this study (Table II). One hundred and forty two patients had only single myoma. The size ranged from 1 to 12 cm. The types of myomas and their size and distribution are shown in Table III. The myomas were morcellated and removed through secondary trocar in 156 cases. In 48 cases the myomas were removed by minilap incision and in 27 cases myomas were removed through a colpotomy incision.

The duration of procedures ranged from 60 to 240 minutes with a mean of 95 minutes. Blood transfusion was given

Table I

Presenting Symptoms in patients for myomectomy

Symptoms	No: of Women
Primary Infertility	93
Secondary infertility	31
Abdominal pain & back ache	41
Menorrhagia	19
Repeated abortions	12
Abdominal swelling	7
Dysmenorrhoea	5
Total	215

Table II

No. of myoma in each patient

No. of patient	No. of myomas	Total myomas
142	1	142
33	2	66
20	3	60
12	4	48
8	>5	45
Total	215	361

Table III

Types of Myomas

Type	Size (cm)	Number
Pedunculated	<3cm	20
	>3 cm	15
Subserous	<3	54
	4-5cm	20
	> 6cm	13
Intramural	<3 cm	110
	4-5 cm	81
	>6	30
Broad ligament		11
Cervical		7
Total		361

to 2 patients as postoperative Hb was less than 7gm %. The duration of hospitalization was 24 to 48 hours.

There were no major intra or postoperative complications, but one patient of broad ligament fibroid had mild intraabdominal bleeding which was treated conservatively. No blood transfusion was given for this patient. Fifteen patients had wound infections. In 3 cases wounds healed after several weeks.

Second look laparoscopy was not performed as a routine. Repeat laparoscopy was done after 1 year in 5 cases of infertility, two of them showed no adhesion while 3 showed mild pelvic adhesions. In 6 cases of Caesarean sections, 4 showed mild adhesions while 2 cases had no adhesions.

Discussion

Uterine myomas are one of the commonest gynaecological disorders. Surgical removal is indicated for symptomatic myomas, occasionally incidental myomectomy is performed when myoma is diagnosed during surgery for other indications. Laparotomy myomectomy is the traditional method, but Mais (1996) in his prospective randomized trial study has shown laparoscopic myomectomy has the same therapeutic effectiveness and safety as abdominal surgery. Our experience with laparoscopic myomectomy in 215 women also confirms that myomectomy can be safe, therapeutically effective and associated with short hospital stay.

Although single and small myomas can be removed easily, multiple large myomas are more difficult to excise at laparoscopy. In our series 142 out of 215 patients had single myoma (66%) which suggests that majority of laparoscopic myomectomies are not difficult. Dubuisson et al (1991) recommended that laparoscopic myomectomy be limited to myomas less than 10cm. Nezhat et al (1991) suggested that the procedure be limited to myomas less than 15 cm. In this series, only 46 out of 289 myomas were larger than 6 cm. The bleeding is usually excessive when the myomas are large and deep seated. All bleeding vessels in the pseudocapsule are coagulated before completely enucleating the myoma from the myometrium. Quick suturing is the best method to control bleeding from the myometrium. Morcellation should be delayed till suturing is over. Morcellation is a very tedious and time consuming job. A minilaparotomy myomectomy is preferred when myomas are larger than 5cm and deep intramural. The morcellation as well as suturing can be done through the same wound. In this series 48 cases were performed by minilaparotomy. This includes multiple myomas as well as myomas larger than 6cm. When the myomas are degenerated and soft, minilap

myomectomy is difficult because myoma cannot be firmly held with any instrument. In such cases a liberal incision of myometrium is recommended.

The strength of the myometrium following laparoscopic myomectomy remains unknown. Most of the endoscopic surgeons suture the myometrium in one layer, this may be sufficient for superficial myometrial defects. Deep myometrial defects should be ideally sutured in layers, so a minilap myomectomy with suturing in layers may be a better option for the beginner.

Postoperative adhesion formation is another important matter for consideration. Dubuisson (1998) in his series of 45 patients who underwent second look laparoscopy after myomectomy showed adhesions in 35.6%. The factors, which influenced the occurrence of an adhesion, were posterior location of myoma and use of sutures. The rate of adhesions on adnexa was less. Although we performed a small number of second look laproscopies, our results also suggest a low incidence of adhesions.

Conclusion

Myomectomy is indicated for symptomatic myomas. With more experience in endoscopic surgery most of the myomas can be removed laparoscopically. But when myomas are multiple and large, laparoscopic myomectomy should be avoided. Lap assisted myomectomy is a good technique for these type of myomas.

References

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