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Laparoscopic myomectomy: preliminary report

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SUMMARY

From January, 1st, 1990 to September, 30th, 1993, 230 laparoscopic procedures have been performed. The age of the patients with fibroids ranged between 20 and 43 years, and 42 myomectomies in 30 patients were carried out. The diameter of the fibroids reached 7.5 centimetres. No complications occurred intraoperatively, and all patients came home after 24 hours. At this time, two patients who wished to conceive have had a normal pregnancy with vaginal delivery at term. The authors preferred disposable trocars (Ethicon[®], Auto suture[®] and Dexide[®]), and disposable surgical instruments (graspers, scissors, needle - holders and dissectors). They also used the Semm's Myoma-enucleator[®] in association with the endo-coagulation[®] apparatus. Ethicon[®] sutures alone or in association with Tissucol[®] (Fibrin glue) were applied to close the uterine incision in many cases.

The authors conclude debating the indications and the easier technique to perform the endoscopic surgery in case of large subserous myomas.

INTRODUCTION

Laparoscopic approach has many advantages over conventional laparotomy, and laparoscopic surgery has been widely used recently, in a large number of gynaecological pathologies, ranging from ovarian cystectomy to hysterectomy associated with laparoscopic pelvic lymphadenectomy. Less morbidity, shorter hospital stays, and less overall expense are the main reasons to prefer this technique to the conventional one. However there are not many reports on laparoscopic

myomectomy, and the authors that have published on this argument have not yet agreed upon indications and procedure. The aim of this work is to report our experience, and to discuss the indications, the technique and the possible complications of laparoscopic myomectomy, suggesting a guideline to perform myomectomy in a safe and effective way.

MATERIALS AND METHODS

From January, 1st, 1990 to September, 30th, 1993 we performed 230 laparoscopic procedures. The age of the patients with fibroids varied between 20 and 43 years, and 42 myomectomies in 30 patients were carried out. The diameter of the fibroids ranged between 1 and 7.5 centimetres. The duration of each procedure ranged from 60 to 180 minutes, depending from the number of myomas and the experience acquired in surgical technique. No complications occurred intraoperatively, and all patients came back home after 24 hours. At this time, two patients who wished to conceive have had a normal pregnancy with vaginal delivery at term. Hystologic evaluation of operative specimens was always performed, and diagnosis of uterine leiomyoma was confirmed in 40 out of 42 examinations. In two cases definitive hystologic diagnosis of adenomyosis was delivered.

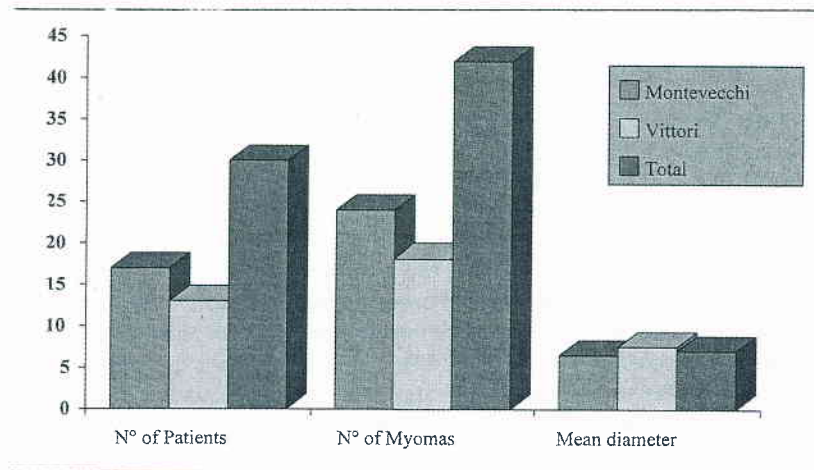


Fig.1 :Patients with fibroids

We employed an Olympus® 10 mm. telescope, in association with a Storz® light source and endocamera (mod. 536 Endovision pocket camera), till February, 1993. From March, 1993 we are using the new Olympus® Xenon light source, and the Olympus® OTV-S4 S-VHS endocamera for visualisation and documentation of every endoscopic procedure. We preferred disposable trocars (Ethicon®, Auto suture® and Dexide®), and disposable surgical instruments (graspers, scissors, needle - holders and dissectors). We also use the Semm's Myoma-enucleator® in association with the endo-coagulation® apparatus. A Wisap Aqua-purator® allowed an easy irrigation and aspiration of the abdomen, with Ringer solution. Ethicon® sutures alone or in association with Tissucol® (Fibrin glue) are applied to close the uterine incision in many cases.

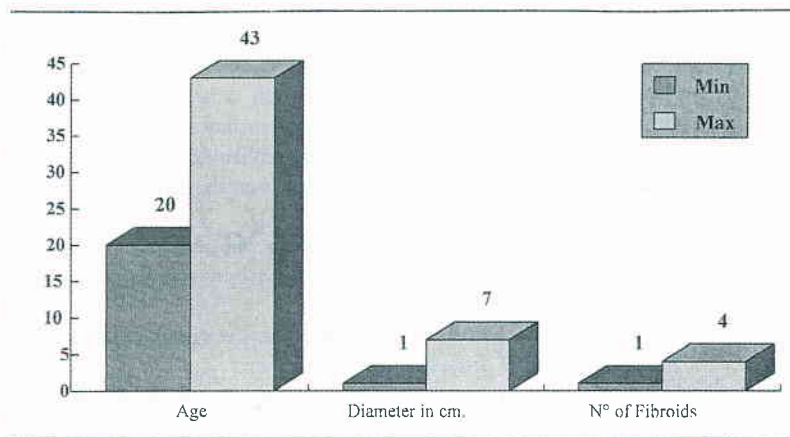


Fig. 2 : Age, size and number of fibroids for each patient

SURGICAL PROCEDURE

Every laparoscopic procedure starts with the patient in supine lithotomic position, after an hysteroscopic evaluation, in order to exclude eventually associated intrauterine pathology. Patients who present sub mucous fibroids undergo a transcervical hysteroscopic resection of myomas, before the intraperitoneal treatment (these patients are not reported in this study). An intrauterine cannula, filled with methylen blue dye, is applied to evaluate tubal patency in patients with childbearing desire. The surgeon stands up at the left side, with the assistant holding the video camera, at his right side. The nurse near the left leg of the patient gives and takes in position - when required - the instruments. The monitor is placed on the right side of the patient, near her right leg, turned toward the surgeon and his assistant. Even the anaesthesiologist can observe surgical procedures directly from the video. One or two nurses more, for non-sterile manoeuvres, complete the staff in the operative room.

To obtain an adequate pneumoperitoneum we use to perform the blind introduction of Veress needle near the umbilical scar, and then we insert a trocar of 10-11 mm through the same way. This is the main trocar for the visualisation of the lower abdominal structures; two accessory trocars ($\varnothing = 5$ mm) for operative instruments are then inserted, under direct control, in the left and right sovrapubic zone, outside the obliterated umbilical artery, across the avascular area observed by transillumination of the abdominal wall. If we find a very large myoma, we replace one of the sovrapubic trocars with one of 10-11 millimetres. When the sovrapubic trocars are quite lateral and cephalic, the laparoscopic myomectomy become easier. In case of pedunculated myoma one can easily coagulate the pedicle, either with the bipolar, or with the Semm's crocodile forceps. Someone prefers to place a loop ligature around the pedicle instead of electro- or thermo- coagulation.

The subsequent sharp cut with scissors ends the myomectomy.

In cases of intramural fibroids the procedure must be carefully carried out.

After a good exposure of the pathologic mass, the surgeon can begin to lance the visceral peritoneum, and looks for the right cleavage plane. Someone injects a vasoconstrictor (Por-8[®], epinephrine, ...) to reduce the bleeding. We never use this procedure, as we think that the "barohemostasis" due to the CO₂ pressure can be sufficient to prevent bleeding, in most of cases. We prefer the incision

with the electric needle, (monopolar cut), along a longitudinal direction, for an adequate length, in order to obtain a wide window to enucleate the fibroid.

When we have founded the cleavage, the dissection is performed either with scissors, or with the myomaenucleator[®]; the latter is less hemorrhagic.

For fibroids more than 3 cm. in diameter, it is advisable to grasp the large mass with a strong claw forceps, furnished with 2 or 3 teeth, that can easily hold and rotate the myoma.

We had many difficulties to find out the cleavage plane in that patient who presented two adenomyomas, for the deep connection between muscular fibres and endometriotic islets.

After the enucleation, we usually put the fibroids on the vesico-uterine plica, and look for every small vessel from the uterine incision.

In case of diffuse oozing, it can be sufficient to apply the point coagulator (Semm's endocoagulator[®]) at a temperature of 90°C; if a little artery is bleeding, the bipolar forceps can easily provide better hemostasis.

It is necessary to close the uterine incision?

We think that small defects could be leave open, after an accurate thermocoagulation to prevent postoperative bleeding and adhesions. Large defects *must* be closed, in order to prevent uterine rupture during pregnancy or labour, and possible bowel adhesions.

We used the endosuture in 21 of the 30 patients, with a Vicryl[®] 2-0 monofilament, with a single layer and intraperitoneal knot technique. In three cases of large myomas we preferred to apply, over the suture, the fibrin glue (Tissucol[®]), to prevent - as possible - the adhesions formation on the uterine scar.

Another important problem is how to remove the abdominal mass. Morcellation is mandatory if one want to avoid a posterior culdotomy for the extraction of large myomas (more than 3 cm. in diameter).

We have no experience with the old Semm's tissue punch, but we have used the recently developed manual circular saw, that allows to core out 15 or 20 mm. cylinders of tissue, while the myoma is strongly held by a screw, inside the abdomen. Our impression is quite good, even if the last cylinders are not easily obtained, for the difficulties in securing and stabilising the remaining fibromatous tissue after the first two or three cores.

Another method to remove large masses out of the abdomen, consists in inserting a sharp scalpel through the sovrapubic trocar and dissect, under direct control of the view, the myoma strictly grasped with the claw forceps. This procedure can be quite longer, and must be applied in few selected cases.

After removing the last myoma out of the abdomen, we undertake a copious lavage with Ringer's lactate, and we inspect the entire pelvis to identify every possible bleeding. We leave a large amount of warm solution (more than 500 cc.) inside the peritoneal cavity, in order to obtain a physiological rehydration, a good post operative feeling, and to prevent adhesions formation during the first 48 hours. The small abdominal incisions are then closed and covered with three little sticking plasters.

RESULTS AND CONCLUSIONS

Laparoscopic myomectomy is without doubt an effective, safe and easily performed endoscopic procedure: *is it always necessary?* One could ask if small myomas (less than two centimetres in diameter) must be enucleated. Our answer is *yes*, if you are performing a diagnostic procedure for other reasons, and you want to prevent a possible increment in size, in the future. The answer is *not*, if

the subserous myoma has been diagnosed outside the laparoscopic procedure (i.e.: during an ultrasound evaluation), and it is asymptomatic. Large masses (more than three or four centimetres), must be always enucleated when symptomatic, and we think that the better approach - for the patient - is the endoscopic one. If a large intramural or subserous myoma is not diagnosed during a laparoscopic procedure, one could ask himself if laparoscopic myomectomy can be better than the traditional laparotomic approach, mainly if the patient has a child-bearing desire, considering the actual difficulties in suturing the muscular wall in more than a single layer.

Our personal experience is encouraging, even if wider series and longer follow-up are necessary to express a definitive evaluation.

Regarding the suturing technique, we think that a wide defect on the uterine wall must be sutured with single knots or in continuous, even in a single layer.

We also think that hemostasis must be carried out very carefully, and the use of bipolar electro-surgery and Semm's thermocoagulation can be effective in most cases.

During the first procedures, because of our inexperience, the morcellation of large fibroids required more than one hour, so that we doubted the effectiveness of the method. However our latter myomectomies have been performed in shorter time (no more than 60 minutes), and the above mentioned technique of removing large fibroids allowed us to complete the procedure in acceptable time.

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