myomectomy for myomas >9 cm in only 15 cases (7%). The mean duration of the operation was 130 ± 56.1 min. The mean blood loss was 1.4 ± 1.15 g/100 ml Hb. The hysterectomy was sutured in over half the cases (118 patients; 55.4%). These sutures were performed by laparoscopy in 86.4% of cases (102 patients) and we made the suture after conversion to laparotomy in only 16 cases (13.6%). For the 102 patients who had a uterine suture, this was carried out by minilaparotomy in 23 cases (29.1%). These were difficult cases with a long, deep or haemorrhaging hysterotomy, or one which was placed in a difficult position for exclusively laparoscopic suturing to be carried out under satisfactory conditions. In these cases we used conventional laparotomy instruments measuring 24 cm long. The rate of suture via minilaparotomy is inversely proportional to our experience in laparoscopic suturing.

In some cases we carried out LAM as recommended by Nezhat et al. (1994), but this does not necessarily mean that this technique should be systematically used for complicated laparoscopic myomectomies. One of the main situations in which laparoscopic myomectomy is difficult is when the myoma is in a posterior location, especially when close to the uterine isthmus. In these situations exposure, whether for enucleation of the myoma or the uterine suture, will not really be made any easier by a minilaparotomy. However it is possible for experienced laparoscopic surgeons, highly skilled in endoscopic suturing, to achieve quality uterine sutures, whether in a single layer (serosa and myometrium) or two layers (Dubuisson et al., 1995a). Similarly, the minilaparotomy is certainly not the best solution for myomas which have developed in the broad ligament and we believe that this location is an excellent indication for laparoscopic surgery. The second difficulty with laparoscopic myomectomy is extraction of large myomas. Here again we do not believe that a minilaparotomy is the ideal solution. Under these circumstances the time required for morcellation and extraction would be long and difficult if the minilaparotomy is truly mini, and is not >4 cm. These arguments are all the more valid in that it is possible to make extraction of large myomas via laparoscopy far easier by using the electromechanical morcellator (Steinet et al., 1983). In our study we timed this phase of the operation. Between 3–20 min are required to morcellate the myomas, depending on whether the myoma measures 4 or 8 cm. Finally in the case of obese or overweight patients it would not seem feasible to propose a minilaparotomy because of the thickness of the abdominal wall which would limit retraction of the myoma to the abdominal wall.

All these elements enable us to stress that just as for any surgical technique, once it has been shown to be feasible, the most important element is the indication for surgery. We believe that laparoscopic surgery is indicated for subserous and intramural myomas, provided the following conditions are met. Firstly the myoma must not be >8 cm, and secondly the number of fibroids to be removed must not exceed two. If these conditions hold true then the laparoscopic operation generally takes place under satisfactory conditions. To us the main question is not how to specify the indications for minilaparotomy, but rather how to ensure that the indications for laparotomy for myomectomy are respected. For patients desiring pregnancy we believe that if the operation is to take place via laparoscopy, it would be best carried out in specialized centres dealing specifically with this problem so that in a few year’s time they can present objective studies concerning the quality of the uterine suture.

References

The controversy of laparoscopic myomectomy

D.Dicker1, A.Dekel, R.Orvieto, I.Bar-Hava, D.Peleg and Z.Ben-Rafael

Department of Obstetrics and Gynecology, Rabin Medical Center, Golda Campus (Hasharon), Petah Tikva, and Sackler School of Medicine, Tel Aviv University, Israel

1To whom correspondence should be addressed at:

935
Fibroid uterus is the most common pathology affecting about 25% of women in their reproductive years, causing a spectrum of symptoms, such as pain, discomfort, vaginal bleeding, abdominal enlargement and infertility.

The current trend in the western world to postpone marriage and birth coincides with advanced age, and increased frequency and risk of uterine fibroids. Despite this trend, there is a growing tendency to preserve fertility potential, and thus conservative uterine surgery, instead of definitive, irreversible hysterectomy, is preferred.

In the last decade, laparoscopy has developed into an effective tool that facilitates a wide range of pelvic surgery, including conservative myomectomy. The most common motive for conservative myomectomy, and hence laparoscopic myomectomy, is the patient's will to avoid hysterectomy for personal reasons, or conserve fertility. The decision regarding the route of operation should rely on the risks and benefits of all options.

Advantages and disadvantages of laparoscopic myomectomy

The many advantages of laparoscopic myomectomy include short hospitalization, discharge of most patients within 1–2 days of surgery, short recovery period, and resumption of normal activities within 1–2 weeks. Post-operatively, pain is considerably less and post-operative complications such as ileus and the sequelae of venous stasis are significantly fewer.

Nevertheless, the disadvantages should also be considered: (i) a 'unique', and possibly greater degree of skill is necessary in laparoscopic suturing; (ii) the number of instruments and various angles of insertion to approach the surgical site are limited; (iii) flexibility in planning the surgical technique and removal of the fibroids from the abdominal cavity is also limited; (iv) operating time is frequently longer. Furthermore, the difficulty in obtaining accurate apposition of the edges of the uterine wound after myomectomy may produce more adhesions. Thus, fertility initially associated with fibroids may become obstructive infertility.

Indications and contraindications to laparoscopic myomectomy

Myomectomy by way of any route is a controversial subject. The accepted indications for myomectomy are secondary infertility with a past history of second-trimester loss and preservation of fertility in women with either hypermenorrhoea leading to anaemia, or a large lower abdominal mass. Nonetheless, the technique is limited by the number, size and location of the tumours. Numerous (four or more, ≥3 cm in diameter) or voluminous (>10 cm in mean diameter) fibroids are contraindications to laparoscopic surgery (Dubuisson et al., 1992) and should be treated medically prior to surgery to reduce size and vascularity. Laparoscopic myomectomy is suitable only for subserous fibroids and those intramural fibroids to which access can be easily gained without entering the uterine cavity. Deep intramural fibroids are difficult and tedious to remove laparoscopically, and there is little justification for this surgical method if it is likely to take several hours. Furthermore, there are significant technical difficulties in removing intraligamentous fibroids because of the potential risks of damage to the ureter and uterine artery and haematoma formation.

Myomectomy technique

Solitary, pedunculated myomas can be separated from the uterus by dissecting and dividing their pedicle with bipolar forceps and scissors (Semm and Mettler, 1980), or by ligating their pedicle with an endosuture (endoloop) and then dividing the pedicle. Small tumours are removed from the peritoneal cavity through a 10 mm cannula.

With the use of sharp scissors or electrocutting, larger-sized fibroids are primarily cut and converted into narrow strips. The morcellated pieces of tissue are then removed through the 10 mm cannula. This approach is also time-consuming. Alternatively, the fibroids may be removed from the abdomen by enlarging one of the suprapubic incisions. The myoma is held with forceps and brought against the abdominal wound to provide an air seal, which in turn prevents loss of the pneumoperitoneum. The myoma is morcellated through the wound, making it possible for the pieces to be removed through the incision. A third method of removal is through a culdotomy incision.

Removal of large, intramural fibroids has also been described in recent years (Nezhat et al., 1991; Hasson et al., 1992; Dubuisson et al., 1993; Reich, 1995). A vertical incision is made with a monopolar-pointed knife or hook electrode in the uterine wall and through the pseudocapsule of the fibroid at the dome of the tumour. The myoma may then be fixed with a grasping forceps or a myomectomy drill. Dissection is carried out by traction on the fibroid and countertraction on the uterus, and division with unipolar scissors or laser. Vessels in the connective tissue bridges between the fibroid and uterus are identified, desiccated with bipolar or unipolar electrodes and sectioned. Hydrodissection may be of assistance in the separation of the fibroid from the uterus. The vascular pedicle of the fibroid must be recognized and desiccated before sectioning and removing the tumour from the uterus. The fibroid is then stored in the pouch of Douglas pending the eventual removal from the abdominal cavity.

Complete haemostasis of the fibroid bed is mandatory before closing the uterine defect. This may be achieved by monopolar or bipolar electrocoagulation, or laparoscopic suturing. Deep defects should be meticulously closed with sutures, in view of the fact that dehiscence is a well-recognized, although uncommon, complication of myomectomy (Harris, 1992). It should be emphasized that the technique for laparoscopic suturing is difficult to acquire due to the considerable requirement of manual dexterity. Furthermore, it is almost impossible to suture laparoscopically with the same precision as that by open laparotomy. Recently Nezhat et al. (1994) reported a new technique, namely laparoscopically-assisted myomectomy. This method enables conventional multi-layer suturing, is less
complicated technically, less time-consuming and the duration of hospital stay, as well as return to normal activity are almost similar to that of laparoscopic myomectomy.

Discussion

Laparoscopic myomectomy is technically feasible and is a substitute for abdominal myomectomy in selected cases with many surgical, as well as patient, advantages. Nevertheless, if the fibroids are large, multiple, or situated deep in the myometrium, the procedure is more difficult and removal from the abdominal cavity is complicated. Myomectomy may be facilitated by pretreatment with gonadotrophin-releasing hormone (GnRH) agonists, but reconstruction of the uterine defect is never easy.

The difficulties encountered by the surgeon in suturing the serosa as accurately as that performed by laparotomy may be detrimental to fertility and the integrity of the uterine scar should give cause for concern when fertility is desired. Mini-laparotomy or laparoscopic-assisted myomectomy provide the surgeon with the means to overcome these drawbacks and may be preferable in selected cases.

References