

Minilaparotomy and Microlaparotomy in Benign Gynecologic Disease

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Özet

Amaç: Bu çalışmadaki amacımız, hem laparoskopik yaklaşıma, hemde konvansiyonel laparotomiye bir alternatif olarak geliştirilmiş olan mikro ve minilaparotomi tecrübemizi sunmaktır.

Materyal ve Metod: 1 Aralık 1994 'den, 31 Aralık 1998 'e kadar benign adneksiyal veya uterin hastalık için, mikro veya minilaparotomi ile pelvik cerrahi yapılan 438 hastanın verileri retrospektif olarak toplandı ve değerlendirildi.

Sonuç: Cilt insizyon uzunluğu 23 hastada 4 cm 'den küçük, 110 hastada 4-6 cm, 305 hastada ise 6-8 cm idi. 319 hastaya bilateral/unilateral salpingooforektomi ve/veya, total abdominal histerektomi 76 hastaya myomektomi, 30 hastaya kistektomi, 7 hastaya salpinjektomi ve 6 hastaya salpingooforektomi yapıldı. Ortalama operasyon süresi 41 dakika idi. Ortalama kan kaybı 90 ml. idi. Ortalama post-operatif hastanede kalış süresi 2.7 gündü. Post-operatif morbidite olarak 15 hastada ateş, 2 hastada yara enfeksiyonu ve 1 hastada cuff absesi görüldü.

Yorum: Mikro ve minilaparotomi, benign jinekolojik hastalıklarda, seçilmiş hastalarda, kullanışlı ve güvenli bir yaklaşımdır.

Anahtar kelimeler: minilaparotomi, laparoskopi, histerektomi, ovarian kist

Summary

Objective: To report our experience with micro and minilaparotomy developed as alternatives to laparoscopic approach as well as conventional laparotomy.

Material and Methods: The data were collected on 438 patients who underwent pelvic surgery by micro and minilaparotomy for benign adnexal or uterine disease from December 1, 1994 to December 31, 1998.

Results: The length of the skin incision was less than 4 cm in 23 patients, 4-6 cm in 110 patients and 6-8 cm in 305 patients. Total abdominal hysterectomy were performed with or without BSO/USO in 319 patients, myomectomy in 76, cystectomy in 30, salpingectomy in 7 and salpingoopherectomy in 6 patients. Mean operative time was 41 minutes. The mean estimated blood loss was 90 ml. The mean postoperative hospital stay was 2.7 days. Postoperative morbidity consisted of fever in 15 patients, wound infection in 2 and cuff abscess in 1 patients.

Conclusions: Micro and minilaparotomy is a feasible and safe approach in the surgical treatment of benign gynecologic disease for a selected group of patients.

Keywords: minilaparotomy, laparoscopy, hysterectomy, ovarian cyst

Introduction

Operative laparoscopy offers several benefits over an open procedure. Operative laparoscopy produces minimal scarring, mild trauma to soft tissue, gentle handling of the reproductive organs and fewer de novo adhesions (1), and minimal bowel manipulation, therefore reduces the hospital stay and recovery period (2). When performed by a trained and experienced surgeon, the occurrences of intra-operative and post-operative complications and morbidity are fewer than with laparotomy (2). However it is expensive in terms of prolonged operative time (3), dedicated and disposable instruments (4) and lengthy training of surgeons who must acquire new and relatively unfamiliar manual skills. Hospital costs associated with most operative laparoscopies, despite decreased postoperative hospitalization, continue to be higher than the costs associated with laparotomies (2,5).

Minilaparotomy already adopted for general surgery in symptomatic cholelithiasis as an alternative to standard subcostal incision or laparoscopic cholecystectomy (5), could be a valid and cost-effective alternative to laparoscopy in gynecologic benign disease. It also is a minimally invasive surgery and because it uses traditional techniques, can be

mastered in a reasonable manner, quickly and with conventional instruments.

The object of our paper is a presentation of our experience during 438 micro and minilaparotomies developed as alternatives to laparoscopic approach as well as conventional laparotomy.

Materials and Methods

Between December 1, 1994 and December 31, 1998, 438 patients underwent pelvic surgery by micro and minilaparotomy in the department of gynecology of Ankara University Hospital for benign adnexal or uterine disease with relative contraindications for vaginal surgery (such as lack of uterine descent toward the vagina, previous pelvic surgery and/or fixed uterus, necessity for the removal of the adnexa).

Microlaparotomy is defined as less than 4 cm skin incision, modern minilaparotomy is from 4.1 to 6 cm and the conventional minilaparotomy is defined as from 6.1 to 8 or 10

cm long abdominal incisions. In general a standard laparotomy is a 10 to 15 cm Pfannenstiel incision or a midline incision from the pubic symphysis extending close to the umbilicus.

Technique

Under general anesthesia, a transvers skin incision less than 8 cm is made 2-4 cm above the pubic symphysis. The abdominal fascia is opened transversely to a width of 8-14 cm. The peritoneum is opened and dissected caudocranially. After the patient is placed in a Trendelenburg position, a wet pad is placed to pack the bowel upward. Two or three Deaver retractors are used in order to provide good operative view. The uterus or the other affected organs are pulled toward or through the abdominal wall. When the mass is too large for exteriorization, to prevent spilling, a purse string is created on the cystic wall and tied around the suction tube immediately after the cyst has been punctured. After aspirating the fluid, the empty cyst is pulled out of the abdomen and stripped away from the parenchyma. During hysterectomy, the uterus is pulled out using one tenaculum or forceps. The retractors are repositioned continually for better exposure. Electrocautery is used for hemostasis and dissecting soft tissues to keep the operative field bloodless. No 1 vicryl sutures are used on all pedicles and vaginal cuff. The surgical techniques are basically the same as in conventional laparotomy.

Results

The mean age of the patients was 45.3 years (range 26-75). The length of the skin incision was less than 4 cm in 23 patients (5.2%), 4-6 cm in 110 patients (25.1%) and 6-8 cm in 305 patients (69.6%). The preoperative diagnosis was summarized in **Table 1**. Intra-operative findings confirmed preoperative diagnosis except for three endometriomas that proved to be corpus hemorrhagicum. Total abdominal hysterectomy were performed with or without BSO/USO in 319

Table 1: Preoperative Diagnosis

	n: 438
Myoma uteri	314
Endometrial hyperplasia	44
Persistent menometrorrhagia	21
Ovarian tumor	34
Serous Cystadenoma	4
Dermoid cyst	5
Endometrioma	22
Corpus hemorrhagicum	3
Hydrosalpinx	2
Ectopic pregnancy	5
Adenomyosis	2
Ovarian torsion	6

patients (72.8%), myomectomy in 76 (17.3%), cystectomy in 30 (6.8%), salpingectomy in 7 (1.6%) and salpingoophorectomy in 6 (1.4%) patients.

The concomitant procedures during the minilaparotomy performed for benign gynecologic disorders were appendectomies in 196 patients, partial omentectomy in 28 patients that was performed during myomectomies to reduce the adhesion formation, Marshall-Marchetti-Krantz in five and Burch in one patient.

The mean operative time was 41 minutes (range 20-90). The mean estimated blood loss was 110 ml (40-500 ml) and only one patient needed blood transfusion (ruptured ectopic pregnancy). The mean postoperative hospital stay was 2.7 days (range 1-7 days) (**Table 2**). Most of these patients were not followed after discharge from the hospital therefore further recovery was not addressed.

Table 2: Operative Results

Operation time (minutes)	41 (range 20-90)
Estimated blood loss (ml)	110 (range 40 - 500)
Hospital stay (days)	2.7 (range 1-7)
Complications	
Febrile morbidity	15 (3.4 %)
Wound infection	2 (0.4 %)
Cuff abscess	1 (0.2 %)

Postoperative morbidity consisted of fewer (greater than 38 C) in 15 patients (3.4%), wound infection in 2 (0.4%) and cuff abscess in 1 patient (0.2%). In all cases, bowel function returned to normal within 24 hours.

Discussion

Symptomatic uterine leiomyomas account for a large percentage of hysterectomies. Some of these hysterectomies can be done vaginally whereas others require a generous laparotomy. Chapron and Dubuisson show that if vaginal hysterectomy is not feasible, laparoscopy could avoid at least 10-20% of the abdominal procedure (6). Laparoscopy-assisted vaginal hysterectomy appears to be a reasonable alternative to abdominal hysterectomy in selected patients unable to undergo vaginal hysterectomy (7). We believe that minilaparotomy may be the natural counterpart of laparoscopy in the field of minimally invasive surgery. Indeed the advantages seem to be comparable, the costs are reduced and training is simple. We must accept the fact that not all gynecologic surgeons are skilled in advanced laparoscopic procedures; therefore use of more traditional techniques with some modifications such as the minilaparotomy approach seem logical.

From the standpoint of cost-effectiveness, one could argue the smaller incision would result in greater operative time and the possible need for an additional surgical assistant.

Both these factors could increase the cost of the procedure. But despite the limited surgical field, operative time for minilaparotomy seems to be shorter than that for laparoscopy performed for similar diseases (7,8).

For the minilaparotomy, good assistance is important. With the small incision, exposure is reduced and this may predispose to operative injury. In some authors opinion, severe obesity (Body mass index (BMI) greater than 35) may hinder minilaparotomy, because need to extend the skin incision (9). However, in all our patients, BMI was smaller than 28 and so we did not need conversion to a pfannentiel incision. Notably in cases of ovarian cysts, the major question is the nature of the mass because lesions suspected to be malignant must be operated on by laparotomy (9). We believe that a patient with a suspicious (for malignancy) adnexal mass or large ovarian cysts are best managed with minilaparotomy because if necessary, it can be converted to a conventional laparotomy. In some situations such as, a suspicious adnexal mass that is removable intact through the small incision, a large benign cystic ovarian tumor that can readily be drained without peritoneal spillage as the initial step and hysterectomy as part of the planned procedure lend themselves to minilaparotomy for an adnexal mass.

This study demonstrates that minilaparotomy is a feasible and safe approach in the surgical treatment of benign gynecologic disease. Excellent esthetic results, short operative time, mild post-operative pain and early discharge are the most attractive features of this technique.

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