Laparoscopic herniorrhaphy: an analysis of 200 cases

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SUMMARY

The laparoscopic repair of inguinal hernia was performed without major complications in 200 patients from March, 1995 to August 1997. A transabdominal preperitoneal approach(TAPP, 140 cases) or totally extraperitoneal approach(TEPA, 60 cases) were used to dissect and repair the entire floor in all patients, placing a sheet of polypropylene mesh. Both CO_2 pneumoperitoneum and lifting method(gasless laparo-lift) were used under general anesthesia or epidural anesthesia. The duration of hospital stay was 3.7 days and patients returned to normal activity in an average of 10 days. One recurrence was observed at 2 months after operation and 10 minor complications were developed. The overall short-term results suggested that laparoscopic repair of groin hernia is technically feasible and a safe procedure compared with other classic methods of hernia repair with low morbidity and recurrence, and minimal discomfort. But the value of laparoscopic herniorrhaphy remains to be determined, and randomized controlled trials will be necessary.

INTRODUCTION

Inspired by the successful outcome of laparoscopic cholecystectomy by P. Mouret, laparoscopic techniques got a popularity in the field of general surgery, and variety of laparoscopic operations have been done. In search for the reduction of unnecessary tissue damage, the laparoscopic approach using a synthetic mesh in the preperitoneal space accomplishes a tension-free hernia repair like Lichtenstein et al and is an attractive alternative. The author has carried out a prospective study on the first 220 laparoscopic hernia repairs. The main objectives of this study were to evaluate the morbidity, post operative complications, patient recovery, and early operative results.

MATERIALS AND METHODS

200 patients(149 men, 51 women) with 220 groin hernias(20 bilateral and 18 recurrent hernias) were operated in the Department of Surgery, University of Ulsan College of Medicine & Asan Medical Center and Kang-Nung Hospital between March, 1994 and August, 1997. The risks, benefits and alternatives to both repairs(classic methods and laparoscopic approaches) were explained to patients in detail including the recurrence. Laparoscopic hernia repair was offered only to patients without significant comorbid diseases which were unsuitable for receiving general or epidural anesthesia. Patients with known bilateral hernias were encouraged to undergo laparoscopic repair. The median(range) age of the patients was 55(16~84), and the median(range) follow-up was 11(1~40) months. Two kinds of laparoscopic techniques were used; 140 transabdominal preperitoneal approach(TAPP) and 60 totally extraperitoneal approach(TEPA). All of the TEPA were done under general anesthesia using CO_2 pneumoperitoneum. In TAPP, 125 cases were done under general anesthesia, and 2 cases with Laparo-lift under epidural anesthesia with Fentanyl. All of the TAPP were done with 3 ports. After identification of the hernia,

the peritoneum was sharply incised from the anterior iliac spine to the public tubercle, and the hernia orifice was isolated and sharply circumscribed. The retroperitoneum was completely dissected exposing Cooper's ligament, epigastric vessels, and iliopubic tract. Then a polypropylene mesh of 7×12cm in size was placed into the preperitoneal space, covering all the three possible hernia sites. The mesh was then fixed with a hernia stapler to the pubic tubercle, Cooper's ligament and abdominal wall. Reperitonealization was performed with stapling or hand-sewing technique. For TEPA, a 15-min curvilinear incision was made at the inferior border of the umbilicus. The anterior surface of rectus sheath was exposed just lateral to the low-midline and insised transversely for a length of 13mm. An index finger was then inserted into the insision and directed inferiorly initiaing a tunnel of dissection behind the rectus muscle at top of the posterior rectus sheath. The blunt-tipped cannula was then adevaced through this tunnel to the symphysis pubis to displace the peritoneum with the balloon to allow visualization of the dissected preperitoneal cavity. Insuffulation was started at the preperitoneal space with 8mmHg of pressure. An operative laparoscope was the introduced. Under the direct vision, an additional 10/11mm trocar was introduced in the middle of the umbilicus and pubis, and a 5-mm trocar is introduced suprapubically into the preperitoneal tunnel. The dissection was then carried anteriorly identifying the inferior epigastric vessels and the hernia defect.

RESULTS AND CONCLUSIONS

Among the total of 220 hernias reparied in 200 patients, there were 149 men and 51 women. The mean age was 55(range 16 to 84 years). There were 138 indirect(69%), 18 direct(9%), and 6 femoral(0.3%) hernias. 20 were bilateral and 18 were recurrent. In the laparoscopic approaches, there were 140 TAPP and 60 TEPA. All of the TEPA were done under G/A with CO_2 pneumoperitoneum. In TAPP, 125 cases were done

Laparoscopic Herniorrhaphy Summary

Study Period	March, 1994 - August, 1997	
M/F	149 Male	51 Female
Age	57(Average)	18-78(range)
Surgical Approaches & Anesthesia		
TAPP, CO_2 & G/A	115	10
TAPP, Lift & G/A	10	3
TAPP, Lift & Epid.	1	1
TEPA	23	37
Hernia types		
Indirect	103	35
Direct	15	3
Femoral	0	6
Bilateral	16	4
Recurrent	15	3
Recurrences	1	0
Complications	4 inguinal seroma	2 port-site hematoma
	1 transient neuralgia	2 wound infection
	1 hydrocele	

under G/A with CO2, 13 under G/A with laparo-lift, and 2 under epidural anesthesia with Fontanyl using Laparo-lift. The median(range) operation time for unilateral was 45(30-110) min in TAPP and 42(25-60) min in TEPA, but it was 70(60-150) min in TAPP and 60(45-110) min in TEPA for the bilateral hernias.

A total of 10 postoperative complications were occurred including one recurrence(0.5%) at 2 months after operation, which was repaired laparoscopically. Minor complications were 2 port-site hematoma, one transient neuralgia, one hydrocele, 4 inguinal seroma, and 2 wound infection. We didn't experience complications related to the prosthetic mesh, and there were no intra- or post-operative death. The duration of hospital stay was 3.7 days, and 195(97.5%) patients were back to work within 2 weeks.

One the basis of the results in this study, it appears that laparoscopic hernia repair is a safe and effective procedure with low morbidity, low recurrence, and early return to normal activity, especially for those with bilateral or recurrent hernias. For the patients with high-risk cardiopulmonary problems, we should consider the use of Laparo-lift under epidural anesthesia with Fentanyl. But it is necessary to evaluate the value of laparoscopic herniorrhaphy with randomized prospective controlled trials.