PLACE OF MINILAP CHOLECYSTECTOMY IN AN ERA OF LAPAROSCOPIC CHOLECYSTECTOMY

Col AK CHATURVEDI, ^{VSM}*, Col KVS RANA ⁺,
Lt Col MM HARJAI ⁺

ABSTRACT

In view of surgical and economic factors of our country, minilap cholecystectomy can be performed as an alternative to the laparoscopic cholecystectomy and offers almost similar results as laparoscopic surgery. We compared the operation time, post-operative hospital stay and return to full activity and the results were encouraging. We hope that this article justifies its claim to orthodoxy in the coming years.

MJAFI 1999; 55 : 19-20

KEY WORDS: Conventional cholecystectomy; Developing country; Laparoscopic cholecystectomy; Minilap cholecystectomy.

Introduction

Cholecystectomy has remained the orthodox method of treatment for gall stone disease since it was first performed by Carl Langenbusch over a century ago in 1882 [1]. In 1987, the complete laproscopic removal of diseased gall bladder in a patient was performed by Dr Phylip Mouret in Lyon, France. Today, about 90% of cholecystectomies in America are done through the laparoscope [1]. However, in developing countries of third world it is still a distant dream because of economical constraints, limited centres of endoscopic surgery and lack of technical training to large percentage of surgeons. The current wide acceptance of laparoscopic cholecystectomy by the surgical community and public demand for the same notwithstanding, the incidence of bile duct injury parallels that of open cholecystectomy [2,3]. It is in view of this fact that minilap cholecystectomy has its place which achieves the same aim with minimal trauma to tissues and comparable risk of complications. However, minilaparotomy has not been clearly defined yet, so that abdominal incisions from 3 to 10 cms are also called minilaparotomy. It has been suggested in 1992 that term microlaparotomy is applied to incisions less than 4 cms, modern minilaparotomy from 4 to 6 cms and conventional minilaparotomy from 6 to 10 cms [4].

Material and Methods

Seventy four patients for symptomatic cholelithiasis underwent minilap cholecystectomy at 166 Military hospital and AFMC Pune from Oct 93 till Dec 1997. There were sixty six females and eight males with an average age of 36 years (16-74 years). Apart from routine investigations ultrasonography of abdomen was done in all

patients to confirm diagnosis and to exclude CBD calculus. All patients with choledocholithiasis were excluded. Seven patients had undergone previous surgery. Seventy percent of the patients were below or within the acceptable range of weight, twenty percent overweight and ten percent were obese. Wound infection was recorded when there was clinical evidence of cellulitis or purulent discharge from the wound.

Technique

The gall bladder was localized before operation by ultrasound and its position marked on the skin. All operations were performed under general anaesthesia or high spinal anaesthesia. The right lower chest of the patient was elevated by putting a rolled towel underneath it and a 5 cms long right subcostal incision was given. The muscle was split along its fibres and retracted and the posterior rectus sheath and the peritoneum opened in the line of the incision. A gauge pack placed and the part of the duodenum retracted inferiorly by a long bladed retractor. The junction of the cystic and the common bile duct was identified first. If difficulty was encountered then muscle cutting was resorted for additional exposure. Rest of the surgery was conducted in the conventional manner. The gall bladder was removed from the cystic duct upwards. The cystic duct and artery was ligated with 2-0 silk. Specialised retractors were not used, only paediatric size Deaver's retractors were used. Sheath was closed with No 1 chromic catgut and subcutaneous tissue with 2-0 chromic catgut. Subcuticular prolene was used for approximation of skin edges. The nasogastric tube was not used in 56 cases and it was removed the same evening in 10 cases and kept for 2-3 days in 8 cases. All intravenous fluids were discontinued and patients commenced on oral fluids/light diet next morning. The patients were discharged when they become independently ambulant as per protocol of service hospitals and were reviewed as out patients regularly thereafter.

Results

Minilaparotomy cholecystectomy was performed with 5 cms incision in sixty six patients during the period of 3 year 3 months. Sixty eight patients (92%) had chronic cholecystitis, four (5%) had acute cholecystitis and two (3%) patients had mucocoele of the gall bladder. The average operating time was 60 minutes. In six pa-

* Senior Adviser in Surgery, Military Hospital, Kirkee, Pune. ⁺ Senior Adviser in Surgery, Military Hospital, Meerut, Uttar Pradesh, [#] Reader in Surgery and Pediatric Surgery, Department of Surgery, Armed Forces Medical College, Pune 411 040.

TABLE 1
Comparison with other series of minilap cholecystectomy

Authors	Goco ¹¹ (1983)	Reddick ⁵ (1989)	O'Dwyer ¹² (1990)	O'Kelly ¹² (1991)	Singh ⁷ (1993)	Sharma ¹⁴ (1994)	Present (1997)
No of patients	50	25	55	32	64	18	74
Length of incisions (cms)	4	3.5	5	5.7	5.7	6	5
Incision extended (%)	12	—	12.7	9.3	10.9	11.1	10.8
Operating time (min)	52	—	61	46	53	77	60
Post-operative hosp stay (days)	1.5	2.8	3.5	3	3.8	6.8	4

tients incision had to be extended to facilitate CBD exploration and in two due to troublesome haemorrhage during dissection. Six patients had mild to moderate post-operative wound infection. The duration of post-operative ileus was 24 hours, the average hospital stay was 96 hours and return to full activity was one week.

Discussion

Cholecystectomy performed through a small incision is feasible and is followed by a shorter recovery time than after conventional cholecystectomy. Also, the results compare favourably with those reported for laparoscopic cholecystectomy [5]. This confirms the mild traumatic character of operation and is consistent with absence of complications. Minilap cholecystectomy has the advantage that it neither requires expensive new equipment nor acquisition of novel skills by the surgeon. This technique is useful when laparoscopic cholecystectomy is contraindicated or the facilities for the same are not available [6].

Although, there are reports in literature that it is possible to explore the CBD through a small incision [7], this procedure was not attempted in this study. The subcostal or transverse incision for gall bladder surgery have proved to be less painful [8]. It is not only due to smaller incision but also because of the shorter duration of the post-operative ileus due to minimal handling of the gut. Patients become ambulant earlier thus reducing chances of respiratory or thrombo embolic complications.

Minilap cholecystectomy has reduced attendant morbidity of conventional cholecystectomy. It also attains the main advantages of laparoscopic cholecystectomy i.e. cosmetic preservation, reduction of post-operative pain, shortening of hospital stay and early return to normal activity [9]. Our series was the largest of minilap cholecystectomy and results were comparable to other workers.(Table 1)

Laparoscopic cholecystectomy is an expensive operation requiring special training for the operating team apart from costly equipment, hence it has been challenged by an alternative method of minimal access surgery i.e. minilaparotomy. It is a valuable alternative to laparoscopic cholecystectomy in our socio-economic

set up of developing nations of third world. It has reduced the morbidity of conventional orthodox cholecystectomy. It has been compared to open conventional and laparoscopic cholecystectomy and represents a clear improvement compared to conventional cholecystectomy [10].

REFERENCES

1. Udwadia TE. Surgery for gall stones: Is the heterodox of today the orthodox of tomorrow? *Ind J surg* 1992;54:465-74.
2. Moossa AR, Easter DW, Van Sonnenberg E, Casola G, D'Agostino H. Laparoscopic injuries to the bile duct. A cause for concern. *Ann Surg* 1992;215:203-8.
3. Davidoff AM, Pappas TN, Murray EA et al. Mechanism of major biliary injury during laparoscopic cholecystectomy. *Ann Surg* 1992;215:196-202.
4. Kaposi MMK et al. Micro and modern minilaparotomy in biliary tract surgery. *Orv Hetil* 1996;137:2243-8.
5. Reddick EJ, Oslon DO. Laparoscopic laser cholecystectomy. A comparison with minilap cholecystectomy. *Surg Endosc* 1989;3: 131-3.
6. Belli G, Romano G, D'Agostino A, Iannelli A. Minilaparotomy with rectus muscle sparing: A personal technique for cholecystectomy. *G Chir* 1996;17: 283-4.
7. Singh K. Mini-cholecystectomy. Subcostal muscle splitting incision. *Ind J Surg* 1993;55:270-5.
8. Armstrong PJ, Burgess RW. Choice of incision and pain following gall bladder surgery. *Br J Surg* 1990;77:746-8.
9. Dubois F, Icard P, Berthelot G, Levard H. Coelioscopic cholecystectomy. *Ann Surg* 1990;211:60-1.
10. Gaetini A, Camandona M, De Simone H, Giaccone M. Cholecystectomy by minilaparotomy. *Minerva Chir* 1997;52:13-6.
11. Goco IR, Chambers LG. "Mini-cholecystectomy" and operative cholangiography. A means of cost containment. *Ann Surg* 1983;49: 143-5.
12. O'Dwyer PJ, Murphy JJ, O'Higgins NJ. Cholecystectomy through a 5 cm subcostal incision. *Br J Surg* 1990;77:189-90.
13. O'Kelly TJ, Barr H, Malley WR, Kettlewell M. Cholecystectomy through a 5 cm subcostal incision. *Br J Surg* 1991;78:762.
14. Sharma A, Singh A. Cholecystectomy through a minilaparotomy-A preliminary report. *Med Journal Armed Forces India* 1994;50:163-6.