

## LAPAROSCOPIC CHOLECYSTECTOMY: REPORT OF 100 CASES AND REVIEW OF THE LITERATURE

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### ABSTRACT

Surgical treatment of symptomatic gallstone disease has changed dramatically since the introduction of laparoscopic cholecystectomy (LC).<sup>1,2</sup> In some populations as many as 80 percent or more of cholecystectomies are now performed laparoscopically.<sup>2,3</sup> So far we have performed 100 cases of LC which will be presented in this paper and different aspects of this new procedure will be discussed, while comparing our results with other reports.

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### INTRODUCTION

Over the past three years we have performed 100 cases of LC with few and rather negligible complications and one mortality which was not due to the procedure.

During LC the gallbladder is removed through an umbilical or epigastric incision. Intraoperative cholangiography may also be performed as was the case in three of our patients.

### PATIENTS AND METHODS

The hospital records of all patients who had undergone LC at Ghaem Medical Center and Mehr Private Hospital between 1993 and 1995 were reviewed. The patients ranged in age from 13 to 65 years. 70 of them were female and 30 were male. The body weight of the patients ranged between 35 and 80 kg. Biliary colic, chronic cholecystitis and acute cholecystitis were indications for LC. We did not operate on jaundiced patients.

Time of the operation, morbidity and mortality plus postoperative hospital stay were recorded. For all patients, routine lab tests were done preoperatively plus grouping and

cross-match for 2 units of blood. Liver function tests, evaluation for HBsAg, and cardiac and respiratory consultations plus hepatopancreatobiliary sonography were also done preoperatively.

### Operative technique

All patients received one dose of prophylactic antibiotic (ceftizoxime, 2 gr). An NG tube and urinary catheter were routinely inserted preoperatively. Each operation was performed by two staff surgeons, one assistant, and a nurse. All operations were done under general anesthesia with endotracheal intubation and controlled ventilation under supervision of a staff anesthetist. The patient was placed supine, and a Veress needle inserted into the midline just below the umbilicus. CO<sub>2</sub> was insufflated into the peritoneal cavity to maintain a pressure of approximately 14-15 mm Hg.

The Veress needle was replaced by a 10 mm trocar and sheath through which was passed a size 30 laparoscope attached to a handycam camera with the help of an adaptor. The rest of the procedure was the same as the standard method.

We performed three intraoperative cholangiographies due to slight dilatation of the common bile duct (CBD) and these were all normal, with free drainage of dye into the duodenum.

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## Laparoscopic Cholecystectomy

If a large stone is encountered the GB neck can be delivered on the skin, opened, and the stone crushed by an instrument placed inside the GB. The GB bed, the stump of the duct and the artery are inspected and irrigated with saline and if necessary a drain may be placed (which was seldom necessary). Liquid diets were started 12 hours and regular diets, 24 hours after the operation. For all patients, sonography was performed postoperatively in order to control the operative region and the GB sent for pathological examination.

### RESULTS

There was one death which was not due to the procedure. LC was successful in 95 of the 100 patients in whom it was attempted (95% rate of success). 5 patients underwent conventional cholecystectomy (CC), 3 due to difficult anatomy, one because of a huge gallstone adherent to the CBD and the last one due to multiple CBD stones not seen in preoperative sonography. The rate of conversion to CC in other reports is 4 percent.<sup>8</sup>

Apart from minor complications such as slight wound infection in three patients and wound hemorrhage in one, we did not observe any serious complication such as duct or instrument injury. This is quite different from many reported series from all over the world which show complication rates between 1.5 to 14 percent.<sup>8</sup> Anesthesia time was between 25 to 120 minutes. Hospital stay was mainly one day which is comparable to many centers.

### DISCUSSION

So far thousands of patients have undergone LC with no deaths, minimal morbidity and a success rate of 98 percent.<sup>4,5</sup> We offered LC to five patients with acute cholecystitis even though most of our patients were suffering from chronic cholecystitis. Our rate of conversion to CC was 5%, due to difficult anatomy in 3, a huge gallstone impacted in Hartmann's pouch and severely adherent to the CBD in one and multiple CBD stones in another. Dubois and colleagues also had 2 laparotomies.<sup>6</sup>

Coleman et al. in a series of 50 patients did only one laparotomy for iatrogenic bile leakage.<sup>7</sup> Perissat<sup>5</sup> and Reddick<sup>4</sup> observed no complications in 25 patients each

after LC. We did not see any instrument or gas complications in our study. Early discharge following LC was also reported by Reddick<sup>4</sup> (1.9 days after the procedure) compared with 2.8 days for a concurrent group of 25 patients who had mini laparotomy cholecystectomy. We observed a more significant decrease in postoperative hospital stay following LC but this was compared with standard open rather than mini cholecystectomy. The advantages of LC are several; the diseased GB is removed, there is no large incision, only 3-5 small stab wounds in the abdomen. Technically, dissection of the cystic duct and artery is very precise and bleeding from the GB bed is easily controlled. Postoperative pain is minimal and the cosmetic advantage is obvious. There is no risk of wound dehiscence and the risk of wound infection is minimal; also, there is no possibility of leaving a foreign body in the abdomen. Significant financial savings using this procedure is definite—the patient is discharged from the hospital quickly and can return to work after one week; thus there are economic advantages for the patient, his community and the health care provider. The only disadvantages of LC are that the operating time is longer than CC and the price of the instruments is rather high in our country. However, with more experience, operating time decreases significantly.

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