Abstract

Background: Traditionally laparoscopic cholecystectomy is performed with four ports. In an attempt to improve cosmetic results and to reduce operative trauma following laparoscopic cholecystectomy, there are new operative techniques called natural orifice transluminal endoscopic surgery (NOTES) or single port laparoscopic surgery (SPLC). SPLC is regarded to provide excellent results in cosmesis. The aim of this study is to show the effectiveness of SPLC in improvement of cosmesis and body image post laparoscopic cholecystectomy.

Methods: The study was conducted in EL Fayoum University Hospital between October 2010 to October 2011 in elective surgery for symptomatic cholecystolithiasis with SPLC on 30 patients.

Results: The study included 30 patients 23 females (76.6%) and 7 males (23.3%) with mean age 45.8 ± 7 years (range 22-65 years), all of them suffered from chronic calcular cholecystitis and underwent SPLC, there were no complications, no mortalities, with mean hospital stay 2 days (range 1-3 days) with better cosmetic appearance for all patients 10 weeks post operatively.

Conclusion: In this study we found that single port laparoscopic cholecystectomy is safe, with short hospital stay, better cosmesis and body image.

Key Words: Laparoscopy – Single port laparoscopic cholecystectomy – Cosmesis.

Introduction

SINCE the development of the first laparoscopic cholecystectomy in 1985, laparoscopic approach has been the treatment of choice for symptomatic gall stone disease [1,2]. Laparoscopic surgery is associated with improved cosmesis, shorter convalescence, pain control and the absence of the formation of intra abdominal adhesions.

Traditionally laparoscopic cholecystectomy is performed with four ports. In an attempt to improve cosmetic results and to reduce operative trauma following laparoscopic cholecystectomy, there are new operative techniques called natural orifice transluminal endoscopic surgery (NOTES) [3,4] or single port laparoscopic surgery (SPLC) [5] and were developed in order to improve cosmesis and to reduce the invasiveness of conventional laparoscopy [6].

SPLC is regarded to provide excellent results in cosmesis [7,8].

Since the available devices for SPLC have been designed to enable a scarless procedure the hypothesis of cosmesis improvement has to be proven.

The aim of this study is to show the effectiveness of SPLC in improvement of cosmesis and body image post laparoscopic cholecystectomy.

Material and Methods

The study is a prospective study which was in EL Fayoum University Hospital between October 2010 to October 2011 in elective surgery for symptomatic cholecystolithiasis who underwent SPLC. The hypothesis of this trial is that patients undergoing SPLC will have a better outcome in cosmesis 10 weeks after surgery.

We included patients with symptomatic chronic calcular cholecystitis with the ability to understand the study purpose, we took a written informed consent from all patients, we excluded patients with liver cirrhosis, coagulopathy, pregnant women, international normalized ratio (INR) below 1.4 and patients who are unable to understand the study purpose.

Surgical technique:

Patients are placed in the French position with the surgeon between the legs, the camera man (first
assistant) on the left patient, the second assistant (facultative) on the right, the nurse near the right hand of the surgeon, for surgical disinfection of the skin iodopovidone is used.

Single-port laparoscopic cholecystectomy (SPLC):

A transumbilical straight 20-25mm skin and fascia incision is performed. The peritoneum is opened and a SILSTMPT 12 port is introduced, this port obtains four openings:

One for gas insufflation and three that can accommodate trocars ranging from sizes 5 to 12mm, the compressibility of the elastic polymer allows for the access ports to expand and form fit the space in which it resides as well enabling the ports to pass through the working channels (Figs. 1-3).

The peritoneum is maintained at 10-12mmHg. A 5-mm 30º long scope is introduced through one of the opening in the SILS port (through 12-mm trocar).

The patient is then placed in an anti-Trendlenburg position. The fundus of the gall bladder is grasped and then we introduce a prolene suture through a straight needle in the right upper quadrant of the abdomen to inside the abdominal cavity to retain the fundus of the gall bladder grasped (Fig. 4).

A grasper is inserted through the right 5-mm trocar to retract the Hartman’s pouch laterally and a left 5-mm trocar is used to introduce the instruments used in dissection of Callot’s triangle.

The dissection is done using a monopolar dissection hook, the cystic duct and artery are dissected and clipped separately with a standard 5-mm clip applicator. The gall bladder is dissected from the liver by the monopolar hook. Once the gall bladder is free from the adjacent tissues we cut the prolene suture that retracts the fundus then the gall bladder retrieval is through the umbilical incision. Closure of the paraumbilical fascia is done with vicryl suture, skin is closed with subcuticular stitches.
Results

Our patients were 30 patients, 23 females (76.6%) and 7 males (23.3%) with mean age 45.8 ± 7 years (range 22-65 years), all of them were suffered from chronic calcular cholecystitis, preoperative laboratory tests including liver function tests and abdominal ultrasound were performed prior to surgery for all patients. All of them underwent SPLC without use of drain and no conversion to open technique.

Mean operative time was 70 minutes (range 65-120 minutes). There were no complications, mean hospital stay 2 days (range 1-3 days) (Fig. 5), no mortalities, with better cosmetic appearance for all patients 10 weeks postoperatively (Fig. 6).

Discussion

The incidence of diagnosed cholecystolithiasis is high: 14.4% in men and 25.3% in women. About 50% of these patients are symptomatic and they are candidates for cholecystectomy [9]. Laparoscopic cholecystectomy has become one of the most commonly performed procedures in laparoscopic surgery and current efforts focus on improving cosmesis by reduction of trocars. There were some difficulties in instrumental movements through the SILS port. In our study there is reduction in post operative pain as shown by other studies [10,11], also in other studies there is reduction in postoperative pain [12-14].

There is better cosmesis after 10 weeks, in other studies cosmesis and body image were assessed after 3 months [15].

In this study there is better cosmetic appearance by single umbilical incision compared to three or four abdominal incisions in three or four ports techniques.

Conclusion:

In our study we found that single port laparoscopic cholecystectomy is safe, with short hospital stay, better cosmesis and body image.

References


