SILS Versus Two Ports Laparoscopic Cholecystectomy

By

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Laparoscopic cholecystectomy (LC) became the standard treatment for symptomatic gallbladder disease. The technique of LC continue to develop toward less invasiveness by reducing the number of traditionally used four ports resulting in the development of safer and feasible three-port and two-port LC.

(Solomon et al; Surg. Endosc. 2010)

Single incision laparoscopic cholecystectomy (SILC) appeared as a new method in 1997. In this method, multiple instruments are used either through a single port device with multiple channels or through multiple closely placed ports.

(Dutta; Pediatr. Surg. 2009)

The suggested advantages of SILC include less port, less postoperative pain and narcotic requirements, better cosmetic result and quicker return to normal activity. Hence, the SILC technique popularity is rapidly growing between surgeons and patients, and the possibility that SILC is becoming an alternative technique to traditional multiport LC has raised.

(Hirano, et al; World J Gastroenterol 2010)
(Rivas et al; Surg Endosc 2010)

On the contrary, the suggested disadvantages include difficult technique, long operative time, higher cost and increased morbidity. There are no available prospective randomized controlled trials in the literature sufficient for a fair comparison between SILC and multi-port LC.

(Edwards et al; Surg. Endosc. 2010)
(Elsey et al; J. Am. Coll. Surg. 2010)

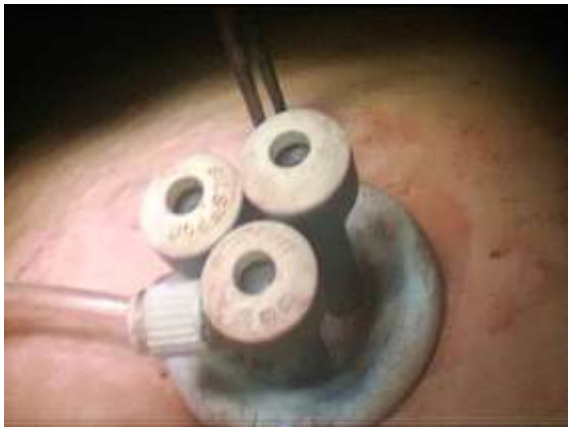
Patients with symptomatic cholecystolithiasis at Sohag University hospital were enrolled in this study. **Inclusion criteria** were: patients with a preoperative diagnosis of symptomatic gallstones aged from 20 to 60 years, American Society of Anesthesiologists (ASA) grade I, II or III, and agreement to complete the study requirement

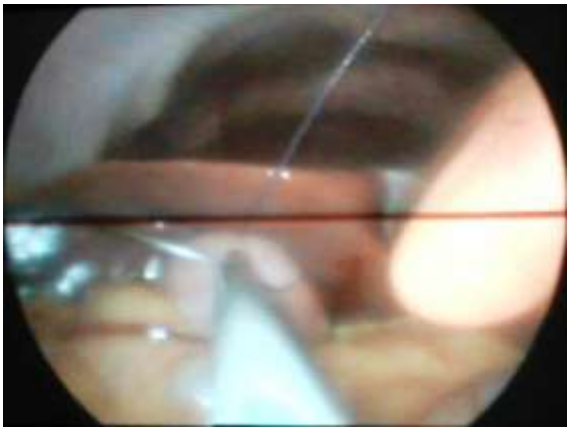
Exclusion criteria were: patients with contraindication to laparoscopy, suspected Mirizzi syndrome, choledocholithiasis, malignancy, previous upper abdominal surgery, previous mesh repair of an umbilical hernia, long-term anticoagulant treatment, pregnant female and stone more than 2 cm in preoperative ultrasonography.

One hundred and seventy- eight patients who fulfill all the criteria of the study were randomly divided equally into two groups (SILC group and TPLC group) according to a computer-generated random numbers.

All surgeries were done by the same experienced surgical team, under general anesthesia with standardized techniques.

Patients data	SILC	TPLC	P value
Age (by years)	40.99 ± 9.56	40.97 ± 10.02	0.99
Gender (M/F)	34/55	37/52	0.88
BMI (kg/m^2)	32.10 ± 4.61	32.93 ± 4.73	0.24
ASA score	1.8 ± 0.66	1.85 ± 0.65	0.57
Indication			
Acute calc. cholecystitis	9	8	
Chronic calc. cholecystitis	80	81	



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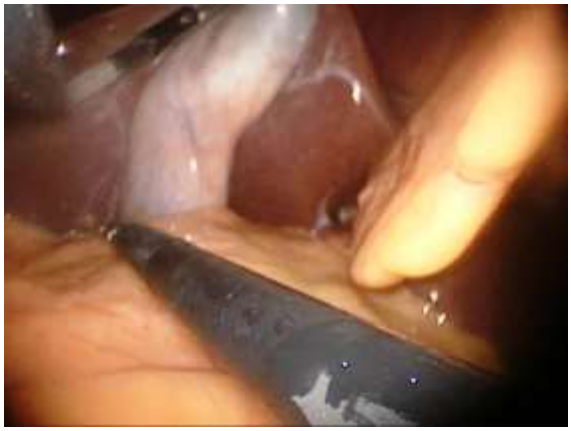

Comparative parameters	SILC	TPLC	P value
Operation time (mean in minutes)	58.9 ± 18.6	45.2 ± 11.8	0.0001*
Success rate incidence (%)	82 (92.2%)	88 (98.9%)	0.001*
Total intra operative conversion rate	7 (7.8%)	1 (1.1%)	0.001*
	6 (6.7%)	0 (0%)	0.001*
Additional trocars placement	1 (1.1%)	1 (1.1%)	1
Conversion to open surgery			
VAS (1-10)			
VAS-6H	3 ± 1.5	3.3 ± 1.6	0.12
VAS-24H	2 ± 0.8	2.2 ± 1	0.16
Opioid use (patient)	13	11	0.67
Complications			
Intra-operative	3 (3.4%)	1 (1.1%)	0.32
Post-operative	5 (5.6%)	2 (2.2%)	0.55
Hospital stay	1.3 ±1.2	1.2 ± 0.9	0.78
Cosmetic score	7.3 ± 1.4	6.7 ± 1.4	0.008*

There were statistically significant differences in the operative time between the two groups (58.9 ± 18.6 min vs. 45.2 ± 11.8 min; P = 0.0001), also success rate (92.2% vs. 98.9%; p = 0.001), and conversion rate (7.8% vs. 1.1%; p = 0.001). On the contrary; there were no statistically significant differences in post operative pain VAS, opioid requirement, and hospital stay between both groups.

There were statistically significant differences in the cosmetic score between the two groups (7.3 ± 1.4 vs. 6.7 ± 1.4; P = 0.008). However; there were no statistically significant differences in post operative complications between both groups