ORIGINAL ARTICLE

Mini port laparoscopic cholecystectomy: appraisal of eleven cases for proficiencies and constraints

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Abstract

Background: Laparoscopic cholecystectomy since its outset has begun to be the criterion treatment for gallstone disease. Now-a-days surgeons approach to a greater extent modified techniques for laparoscopic cholecystectomy. The motive is to make minimally invasive surgery with the help of modern, modified and miniature version of the instruments. We bring forward mini ports laparoscopic cholecystectomy is secure and sound, lessen hospital stay and cosmetically as almost scarless.

Material and Methods: Eleven selected patients planned for elective laparoscopic cholecystectomy, consent obtained, randomized selection to go through for mini-laparoscopic cholecystectomy. Retrospective observational study conducted in surgery department Ziauddin University and Hospital, one month of duration from April 1st 2014 to 30th April 2014. The whole surgery performed through four ports, with 10-mm umbilical, 2.7-mm epigastric, 2.7-mm sub-costal, and 2.7-mm lateral port.

Result: Total 11 patients, 8(72.72%) female and 3(27.27%) were male. Age ranged (18) mean is 35.27. BMI is < 30. Pre-operative pain tolerance average is 3.72. The average pain score on the operative day, first and seven postoperative days was 2, 0.90 and 0.09 respectively. The operative time ranged (20) with a mean 63.6 min. No intra or post-operative complications and conversion seen. Blood loss < 50 ml. Cosmetic result satisfactory as assessed by patient and doctor (blinded). All patients allowed feeding within 8 h. The average hospital stay was 1.47 days.

Conclusion: This technique is attainable and invulnerable almost scarless wounds, incredibly for female young patients. This approach can be customary offered to many patients go through for elective procedure.

Keywords: Mini port laparoscopy, mini-laparoscopic cholecystectomy, reduced port size technique, micro-laparoscopic cholecystectomy, retrospective, scarless

Received:
13th July 2016

Accepted:
27th September 2016

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Introduction:

Laparoscopic cholecystectomy is the universal procedure and is let in as the excellence procedure for cholecystectomy. The approach of performing laparoscopic procedures has endured numerous changes and discrepancies. Diverse surgeons have strived to decrease the number, minimize the port size and instruments to make the minimally invasive operation for better cosmesis and less post-operative consequences and advanced their own myriad approaches.[1-3] In publications, a variety of name like micro-laparoscopy, mini-laparoscopy, mini-endoscopic or micro-endoscopic procedures have been used for little size port laparoscopic cholecystectomy.[4] In this study 2 to 3 mm instruments were used and name Needlescopic surgery was given.[4] In this study 2 mm size instruments used and name Mini-laparoscopic cholecystectomy was given.[5] In this study 5 mm umbilical port and other 3 mm ports were used and name given micro-laparoscopic cholecystectomy.[6] In another study where 5 mm or less size instruments were used and term applied as mini-endoscopic surgery.[7] At present there is no static nomenclature in previous publications. Diverse merging of de-

Table 1: Average values of different variables

		Mean (range)	Median	Mode	Range
Age		35.27	33	29	18
Gender	Male 3(27.2%)	31.3	30	No	6
	Female 8 (97.9%)	34.5	31.5	30	18
Operative time		63.63	60	60	20
Hospital stay		1.47	1.5	1.5	0.30
Cosmetic result	By patient	9.90	10	10	01
	By Doctor (blinded observer)	9.81	10	10	01

Table 2: Post-operative pain as assessed by the patient and doctor (blinded)

Pain score by VAS (visual analog score)	Mean (range)	Median	Mode	Range
Pre-operative pain tolerance	3.72	4	4	4
Operative day	2	2	2	2
First post-operative day	0.90	1	1	2
Seventh post-operative day	0.09	0	0	1

crease port size and decrease number of ports is feasible in laparoscopic cholecystectomy.

Material and methods:

Eleven selected consecutive patients planned according to a schedule for elective laparoscopic cholecystectomy, written consent obtained to take part in this trial were randomized selection to go through for mini-laparoscopic cholecystectomy. Retrospective observational study conducted in surgery department Ziauddin university and hospital, one month of duration from April 1st 2014 to 30th April 2014. The patients keep out if the age older than 60 years, BMI > 30, liver or coagulation disorders, previous major abdominal surgical procedures, acute cholecystitis or acute choledocholithiasis. The whole surgery performed through four ports, with 10-mm umbilical, 2.7-mm epigastric, 2.7-mm subcostal, and 2.7-mm lateral port. Furthermore 2.7-mm graspers, Maryland dissector, hook or spatula, endoscopic shears used, on cystic structures 4mm clip applier was used, in few cases overlapping clip technique was used. To facilitate specimen retrieval a 2.7 mm 30° laparoscope placed via epigastric port. The VAS (visual analog scale) pain scale applied for incision site pain estimation on operative day, postoperative days 1 and 7. All patients assessed their incision site pain one and all of these mentioned days from score 0-10 as considered not a bit to most severely. Only adhesive bandage (Steri-Strips) applied on 2.7-mm incisions instead of sutures, and subcuticular absorbable stitch used only on 10 mm port site. Conceal each of the nicks for 48 hours by a tiny size aseptic bandage. Assessed look and given score of the scar by a scale. It starts from 0-10 as considered from unpleasant to top best cosmetic result at one month follow up visit by patients and by a study doctor blinded observer to the type of laparoscopic cholecystectomy (mini or conventional) and use of instruments. The scores were documented on four port site incisions by each patient and assigned doctor.

Results:

Total 11 patients, Eight (72.72%) were female and three (27.27%) were male. Age range from 27 to 45, mean age is 35.27. All patients had BMI is < 30. The average pain scores are summarized in Table 2. Pre-operative pain tolerance average is 3.72 (range 04). The average pain score 02 (range 02) on the operative day was significantly less. Average pain score on first post-operative day was 0.90 (range 02) and seventh post-operative day 0.09 (range 01). The operative time for these patients ranged from 20 min, with an average time of 63.6 min. No intra-operative or post-operative complications occurred. There was no conversion seen in this mini size laparoscopic modified technique. Minimal blood loss less than 50 ml and no intra-operative transfusions required. All the patients were ready to put up feeding within 8 h. The average postoperative hospital stay was 1.47 days Table1. No turning to conventional method. Neither complications nor operation-related mortality were seen. Cosmetic result was sky-high in our study by the patients and assigned doctor assessments. Evaluation by an assigned doctor, the mean scores were 9.90 (range 01) and by a patients, the mean cosmetic scores were 9.81(range 01) Table

Discussion:

It is exceptionally essential during the time that carry out a modified mini port laparoscopic cholecystectomy, the attainment accepted prin-

ciples of laparoscopic cholecystectomy should not be overstep. It is not sufficiently good to carried out a modified laparoscopic cholecystectomy with mini size ports, with a probable greater importance of improving cosmesis, expedient acceptance of standards of the sight and greater the possibility of bile duct injury. As a result modified laparoscopic cholecystectomy should solely be carry out in selected patients by skilled surgeons. Strive to more extreme for making better surgical consequences have ensued in a decrease number and size of port site incisions.[8-10] Nearly all research studies analyzed mini port laparoscopic and conventional laparoscopic approaches have used as their technique for comparison. Convenience and possible advantages of mini port laparoscopic cholecystectomy were accepted in a few successions.[8,9,11,12] Less incision site pain is effectively set up advantage of laparoscopic procedures. Despite that, straight tie-up between advance less in port size of incision and less pain has not been long standing, most likely for the reason of the several causes of incision site pain.[13] In spite of that, various studies[13-17] manifest that use of a mini size port incision lessen postoperative pain. In our trial we found early reduction of pain in mini port site incision 6 hours postoperatively as patient's analgesia requirement was reduced, according to visual analog pain score lessen postoperative pain. Some other studies showed reduce pain at mini port sites.[18,19] In addition the implement of mini port nick has been proposed to end in negligible mark with satisfactory cosmesis.[20,21] In our study we observed that both patients and blinded observers scored mini-laparoscopic wounds significantly better with regard to cosmetic appearance. Much the same as cosmetic advantage was found in these prospective studies.[14,17,18,22] Extend the duration of surgery oft-times restrain application of recent modified techniques. The Use of mini size equipments in our study did not affect in augmentation of the time span of the operations. No matter of the port size, in our study patients experienced straightforward operations with negligible blood loss. In the same way some other studies[14,22-24] found no notably expand the operative time in this modified mini-laparoscopic cholecystectomy. Differ strikingly this study[16] showed lengthy operative time. The often found factor come up with to turning is the existence of chronic cholecystitis possessed a distinct inflammation, stiffed gallbladder with thick adhesions.[15,25] But in our study we operated selected patients, no hurdles found. In chronic cholecystitis to grasp and handle the gallbladder possibly most strenuous, can damage the instruments (grasper and trocar). Furthermore, mini size laparoscopes endure low resolution and clearness in comparison of conventional laparoscopes.[22] In our study, no conversion related to instruments failure. This study reported a sturdy abdomen, stiff gallbladder wall possibly a restricted factor.[26] So there is need of more tough instruments and better vision and light source. In spite of that a conversion from mini port laparoscopic cholecystectomy to conventional laparoscopic cholecystectomy is not a failure in any way.

Conclusion:

The upshot of our experience of mini size port laparoscopic cholecystectomy in eleven highly selected patients with gallstone disease persuaded to continue. The whole of the procedures were finished with a desired aim within admissible time. This technique is attainable and invulnerable with almost scarless wounds, better cosmesis, incredibly for female young patients. This approach can be customary offered to many selected patients go through for elective procedure accompanied by a bit of learning curve change over for the surgeon.

Conflict of Interest: None

Funding Sources: None

Role and contribution of authors:

Dr Irum Masood, Resident Department of General Surgery, Ziauddin University and hospital Karachi, design the study, data collection, tabulate and write-up introduction, discussion, result and conclusion

Dr Haris Rasheed, Consultant and laparoscopic

general surgeon, Ziauddin University and hospital Karachi, performed surgery, design the study, initial methodology and review

Ahmed Raheem, statistician, Department of Pathology & Laboratory Medicine Agha khan University and Hospital Karachi, did statistical analysis

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