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Original Research Paper

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COMPARING THE PAIN SCORE IN PATIENTS UNDERGOING SINGLE INCISION LAPAROSCOPIC CHOLECYSTECTOMY (SILC) VERSUS STANDARD LAPAROSCOPIC CHOLECYSTECTOMY (SLC)

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ABSTRACT

Background: SILC can best be described as a procedure in evolution. There is no consensus on surgical technique and exclusion criteria for SILC and conflicting reports regarding the merits and demerits of this procedure are present in literature. Efforts to improve outcomes of laparoscopic cholecystectomy heralded the advent of single incision laparoscopic cholecystectomy. The objective of this study was to compare the post operative pain after cholecystectomy done by Single Incision Laparoscopic Cholecystectomy (SILC) vs Standard Laparoscopic Cholecystectomy. **Methods:**This comparative randomised study was conducted in Department of Surgery, Maharani Laxmi Bai Medical College, Jhansi over from 01.01.14 to 30.06.15. 100 consecutive patients who fit into the inclusion criteria were included in the study. 50 patients were included in the single incision laparoscopic cholecystectomy (SILC) Group and 50 Standard Laparoscopic cholecystectomy (SLC) Group. **Results:**The mean operating time was 24.9±9.00 minutes as compared to 19.32± 7.36 minutes in SLC. Mean VAS pain scores at 12 hours (4.58±0.6105 versus 5.16±0.9234, p=0.0004), at 24 hours (3.92±0.5970versus 4.56±0.9304, p=0.0001), at 36 hours (3.28±0.5168 versus 3.8±0.7764, p=0.0002) and next 48 hour (2.69±0.4062 versus 3.14±0.6854, p=0.0003). Significance was calculated by student "t" test. A p value less than .05 was considered significant. **Conclusion:** Patients presenting to M.L.B Medical College with gall stone diseases belong to significantly younger group and shows significant female preponderance.Mean operative time in SILC group was significantly higher than the SLC group.Mean VAS pain score at 12, 24, 36 and 48 hrs was significantly lower in SILC group as compared to SLC group; which was significant at all time.

KEYWORDS :- Single incision laparoscopic cholecystectomy (SILC), Standard laparoscopic cholecystectomy (SLC), visual analogue scale (VAS).

INTRODUCTION

Laparoscopic cholecystectomy is considered as a gold standard for treatment of gallstone disease in the present era since its introduction in 1985[1-2].

Surgical standards of practice continue to evolve towards less invasive surgical approaches with fewer operative complications. Efforts to improve outcomes of laparoscopic cholecystectomy heralded the advent of single port laparoscopic cholecystectomy[3].

Major advantages proposed for this technique are that the patient experiences much less pain as compared to traditional laparoscopic surgery and recovers fasters there is only one incision. The healed incision leaves practically no scar, thus making SILCcosmetically a superior option[4-5].

Major difficulties with this new technique is the sacrifice that has to be made in term of comfort and ergonomics. As all the instruments and camera are inserted through the same incision. The ability to triangulate instruments around the target is lost. SILC is a new advanced surgery which uses the specialized equipment which is very costly. SILC can best be described as a procedure in evolution. There is no consensus on surgical technique and exclusion criteria for SILC. Conflicting reports regarding the merits and demerits of this procedure are present. Modifications of existing laparoscopic instruments has been made to make SILC easier, however more complex modifications result in more expensive equipment. This study aims at testing the feasibility of single incision laparoscopic cholecystectomy and comparing it with standard four port cholecystectomy, by using standard laparoscopic instruments and ports available to all Laparoscopic surgeons.

AIM AND OBJECTIVES

Aim: Comparing the pain scores in patients undergoing Single Incision Laparoscopic Cholecystectomy (SILC) vs Standard Laparoscopic Cholecystectomy.

Objectives:Study to compare the post operative pain after cholecystectomy done by Single Incision Laparoscopic Cholecystectomy (SILC) vs Standard Laparoscopic Cholecystectomy.

MATERIAL AND METHODS

Study design:

This comparative randomised study was conducted in Department of Surgery, Maharani Laxmi Bai Medical College, Jhansi over from 01.01.14 to 30.06.15.

Methodology:

100 consecutive patients who fit into the inclusion criteria were included in the study. 50 patients were included in the single incision laparoscopic cholecystectomy (SILC) Group and 50 Standard Laparoscopic cholecystectomy (SLC) Group.

Inclusion criteria:

1. Age of patient between 15 and 75 years
2. Diagnosis of chronic/acute cholecystitis, symptomatic cholelithiasis, Gall Bladder (GB) polyp, GB Sludge, empyema, mucocele.

Exclusion criteria:

1. Severe co-morbid conditions (uncontrolled diabetes, hypertension, severe direct hyper bilirubinemia)
2. ASA Grade-4

Randomization:

Random allocation of patients presenting with symptoms suggestive of gall bladder disease with confirmatory USG

study was done to the two groups using the sealed envelope technique which was opened just before the skin incision. The two groups were as follows
Group1: SILC
Group2: SLC

Operative technique:
The technique of standard laparoscopic cholecystectomy SLC was performed using a three-trocar approach in routine cases, SILC has been performed using single umbilical incision.

Post operative pain:
Accurate pain assessment is a prerequisite for successful pain management as well as for study. The American Pain Society emphasizes the importance of obtaining the patients self report of pain as the gold standard of pain assessment. There are various pain scores to measure post operative pain :

1. Visual analogue scale (VAS)
2. Numeric pain intensity scale / Numeric rating scale (NRS)
3. Verbal descriptor scale (VDS)
4. Faces pain scale (FPS)
5. MCGILL pain questionnaire (MPQ)
6. Short form MCGILL pain questionnaire (SF-MPQ)
7. Short form 36 bodily pain scale (SF-36 BPS)

The pain scores to be used in our study are —
1. Visual analogue scale (VAS)
2. Numeric pain intensity scale / Numeric rating scale (NRS)
3. Verbal descriptor scale (VDS)
4. Faces pain scale (FPS)

Visual analogue scale (VAS)
A Visual Analogue Scale (VAS) is a measurement instrument that tries to measure a characteristic or attitude that is believed to range across a continuum of values and cannot easily be directly measured. For example, the amount of pain that a patient feels ranges across a continuum from none to an extreme amount of pain. From the patient's perspective this spectrum appears continuous and their pain does not take discrete jumps, as a categorization of none, mild, moderate and severe would suggest. It was to capture this idea of an underlying continuum that the VAS was devised.

Operationally a VAS is usually a horizontal line, 100 mm in length, anchored by word descriptors at each end, as illustrated in Fig. The patient marks on the line the point that they feel represents their perception of their current state. The VAS score is determined by measuring in millimetres from the left hand end of the line to the point that the patient marks.

RESULTS

Comparison of parameters between SILC and SLC.

Parameters	SILC	SLC	p value	
Mean age	38.62±12.66	37.86±11.31	0.3789 (NS)	
Sex Male Female	37 (74%) 13 (26%)	41 (82%) 9 (18%)	- -	
Mean operative time	24.9±9.00	19.32± 7.36	0.0004 (S)	
Mean of pain score of Visual analogue scale (VAS)	12 hour	4.58±0.6105	5.16±0.9234	0.0004 (S)
	24 hour	3.92±0.5970	4.56±0.9304	0.0001(S)
	36 hour	3.28±0.5168	3.8±0.7764	0.0002(S)
	48 hour	2.69±0.4062	3.14±0.6854	0.0003(S)
Mean of pain score of Numeric response scale (NRS)	12 hour	5.24±0.4314	5.36±0.7494	0.3289 (NS)
	24 hour	4.1±0.7071	4.62±0.7253	0.0005 (S)
	36 hour	3.26±0.4430	3.76±0.7439	0.9996 (NS)
	48 hour	2.8±0.5345	3.08±0.5656	0.0125(S)
Mean of pain score of verbal descriptor	12 hour	3.38±0.6023	3.76±0.7439	0.0060 (S)
	24 hour	3.1±0.5439	3.48±0.6773	0.0026 (S)
	36 hour	2.32±0.6527	2.78±0.8919	0.0041 (S)
	48 hour	1.92±0.6006	2.44±0.9071	0.0010 (S)
Mean of faces pain scale (FPS)	12 hour	5.26±0.9648	5.88±0.7461	0.0005 (S)
	24 hour	3.88±0.4797	4.6±0.9258	0.0001 (S)
	36 hour	2.84±0.9913	3.72±0.9905	0.0001 (S)
	48 hour	1.76±0.7708	3±1.0879	0.9921 (NS)

DISCUSSION:

Out of 50 patients operated by SILC 13 were males and 37 were females. In the SLC group distribution was 9 males and 41 females.

Majority of patients were in 20-40 age group (62% in SILC vs 64% in SLC). The mean age of patients in SILC group was 38.62± 12.56 years and in SLC group was 37.86±11.31 years And there is no significant difference between the mean age of two groups[6].

In our study mean operative time in SILC group was higher (24.9+9 minute) than the SLC group (19.32+7.36 minute) which was significant. The operative time for SILC in our study is less as compared to that in other studies because of the high expertise and vast experience of the operating surgeon regarding laproscopic cholecystectomies[7].

In our study the mean VAS pain score at 12, 24, 36 and 48 hr was significantly lower in SILC group as compared to SLC group which was significant at all times[8].

In our study the mean NRS pain score at 12, 24, 36 and 48 hr was lower in SILC group as compared to SLC group. There was significant difference in the mean NRS pain score in SILC group as compared to SLC group at 24 and 48 hr, but no significant difference was found at 12 and 36 hr.

In our study the mean VAS pain score at 12, 24, 36 and 48 hr was significantly lower in SILC group as compared to SLC group which was significant at all times.

In our studythe mean FPS pain score at 12, 24, 36 and 48 hr was lower in SILC group as compared to SLC group. There was significant difference in the mean FPS pain score in SILC group as compared to SLC group at 12, 24, and 36 hr, but no significant difference was found at 48 hr.

There is no study found in literature which has compared post operative pain in patients undergoing SILC vs SLC on NRS, FPS, and VDS scale.

CONCLUSIONS

Based on the comparative evidence presented in this study the following conclusions were made

1. Patients presenting to M.L.B Medical College with gall stone diseases belong to significantly younger group and shows significant female preponderance.

2. Mean operative time in SILC group was significantly higher than the SLC group.

3. Mean VAS pain score at 12, 24, 36 and 48 hrs was

significantly lower in SILC group as compared to SLC group; which was significant at all times.

4. Mean NRS pain score at 12, 24, 36 and 48 hrs was lower in SILC group as compared to SLC group; which was significant at 24 and 48 hrs but not significant at 12 and 36 hrs.

5. Mean VAS pain score at 12, 24, 36 and 48 hrs was significantly lower in SILC group as compared to SLC group; which was significant at all times.

6. Mean FPS pain score at 12, 24, 36 and 48 hrs was lower in SILC group as compared to SLC group; which was significant at 12, 24 and 36 hrs but not significant at 48 hrs.

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