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Growing smaller: Single incision laparoscopic cholecystectomy; patient's vision and surgeon's scope

Manish Madnani
Narayana Multispeciality Hospital, India

Introduction: Laparoscopic cholecystectomy is considered as a gold standard for the surgical treatment of gallstone disease, which results in less post-operative pain, better cosmesis and shorter hospital stay than open cholecystectomy. In 1997, Navarra et al. described a single-incision laparoscopic cholecystectomy as a possible alternative procedure to the four port laparoscopic cholecystectomy. The present study is to compare Standard 4 Port Laparoscopic Cholecystectomy (S4PLC) and Single Incision Laparoscopic Cholecystectomy (SILC), in terms of safety, surgeon comfort, pain scores and final cosmetic appearance of scar.

Patients & Methods: At three different centers of India, total 372 patients were operated for laparoscopic cholecystectomy during July 2013 to December 2014. Patients who met exclusion criteria were not followed up for further data collection. Total 53 patients in SILC and 61 patients in S4PLC group were studied prospectively without randomization (patient autonomy was preserved). All the acquired data was filled in SPSS IBM 20.0 version and statistical analysis was done. Chi square test for qualitative data, Student's 't' Test for quantitative data, Mann Whitney U test for non-parametric data and ANOVA/MANOVA (multivariate analysis) tests for distribution of variances were used.

Results: Young patients selected SILC over S4PLC when given options of both. Mean age in SILC group was 39.87 (range 19-70), while it was 50.43 in S4PLC group (range 26-78). There were 35 (66%) females and 18 (34%) males in SILC group while in S4PLC group there were 33 (54%) females and 28 (46%) males, though this difference was not statistically different. SILC and S4PLC were comparable in incidence of intra-operative (11.3% vs. 9.8%) ($p>0.05$), immediate (1.9% vs. 4.9%) ($p>0.05$) and late post-operative complications (5.7% vs. 3.5%) ($p>0.05$), with a same follow up duration. It was observed that SILC and S4PLC both had no difference in post-operative pain (2.94±1.56 vs. 2.9±1.58) and analgesic requirement (28.3% vs. 27.6%). Dissection during surgery in Calot's triangle was not felt to be difficult by the operating surgeon in both types of surgery, as difficulty was encountered in 7.54% in SILC while in 9.83% in S4PLC group ($p=0.764$). Though surgeons' physical comfort and ergonomics were better with S4PLC than with SILC ($p=0.001$). Use of additional ports was required in more number of cases in SILC than in S4PLC (22.64% vs. 6.55%, $p=0.044$). Duration of surgery was longer in SILC than in S4PLC (70.26±44.8 vs. 58.64±45.76, $p=0.002$). Post-operative hospital stay (31.21±15.91 vs. 33.59±14.21, $p=0.094$) and day of suture removal (7.21±1.34 vs. 7.31±1.39, $p=0.426$) was same with both procedures. Cosmetic appearance of scar is significantly better with SILC than with S4PLC (3.4±1.2 vs. 2.51±1.53, $p<0.0001$), which has impact on overall patient satisfaction (happy or very happy: 94.3% vs. 78.7%, $p=0.001$).

Conclusion: SILC is a method of laparoscopic cholecystectomy with better cosmetic advantage than conventional laparoscopic cholecystectomy. But this advantage comes at the cost of longer duration of surgery, difficult posturing, ergonomics for surgeon and other technical difficulties. Hence, SILC should only be offered to patients in whom it is anticipated to be smooth, who have greater concern for cosmesis and only by the surgeon who has enough experience of performing this procedure.

Biography

Manish Madnani has completed his Super Specialty in Surgical Gastroenterology from National Board of Examinations of India. He is a Consultant Surgical Gastroenterologist, Hepatobiliary and Pancreatic Surgeon at Narayana Multispeciality Hospital, Ahmedabad, India. He has published 3 papers in reputed journals, wrote a chapter in textbook, an article in local medical association's magazine. He has been serving as an Editorial Board Member of reputed medical journals.

manish.madnani@yahoo.com

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