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SURGICAL INCISION;

VERTICAL INCISION OR HORIZONTAL INCISION FOR EPIGASTRIC PORT IN LAPAROSCOPIC CHOLECYSTECTOMY: WHAT SHOULD BE THE CHOICE?

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ABSTRACT… Objectives: To compare the outcome variables among patients undergoing laparoscopic cholecystectomy using horizontal and vertical incisions for epigastric port incision. **Study Design:** Randomized control trial. **Place and Duration of Study:** Department of Surgery, Shalamar Hospital, Lahore from July 2016 to December 2016. **Methodology:** A total of 100 patients undergoing laparoscopic cholecystectomy were selected and equally divided into two groups. Epigastric port insertion was done using horizontal incision (group A) and vertical incision (group B). Electrocautery use, incision extension, use of secondary intervention for bleeding control, blood loss and patient satisfaction regarding scar were noted in both groups and compared. **Results:** In this study, we found that 15 out of 50 required electrocautery in group A while only 4 patients required in group B. Incision extension was needed in 8% of patients in group A while only 2% patients needed it in group B. Blood loss was 4.62 ± 2.64 ml in group A while in group B, it was 1.70 ±0.81 ml. Also 80 % patients were satisfied with horizontal scar while 76 % patients in vertical group. **Conclusion:** Vertical incision for epigastric port insertion is better than horizontal incision in terms of blood loss, bleeding control when compared in laparoscopic cholecystectomy.

Key words: Laparoscopic cholecystectomy, electrocautery, horizontal incision, vertical incision.

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INTRODUCTION

Many new endeavors have been made to diminish operative trauma and better restorative consequences of laparoscopic cholecystectomy (LC). The advances in minimally invasive abdominal surgery (MIS) has led to development of lessening the ports, cosmetic appearance with a solitary incision and natural orifice operation.[1,2] However, these strategies are as yet costly, hard to apply and with far from being obviously best outcomes. But still continuous efforts are being made to reduce the morbidity of LC.[3,4]

Routinely horizontal Incisions are utilized for addition of epigastric port in LC. Most specialists have watched higher occurrence of bleeding through the port site extending up to 10%. We have changed our inclination for vertical entry point with a speculation this incision would prompt lesser rate of port site complications. The objective of this study was to compare the outcome of vertical and horizontal incision for epigastric port site incision in patients undergoing laparoscopic cholecystectomy.

MATERIALS AND METHODS

This was a Prospective randomized controlled trial conducted at Department of Surgery, Shalamar Hospital, Lahore. The total span of this study was 6 months, from July, 2016 to December, 2016. A total of 100 patients with the age being 20 to 60 years having Symptomatic Cholelithiasis were enrolled for this study. Patients with known draining issue, coagulopathy and transformation to open cholecystectomy were excluded from the study. The patients were divided into two groups randomly using computer generated numbers: group A (horizontal incision) and group B (vertical incision). A written informed consent for inclusion into the study was obtained

from all patients. Patients in group A underwent laparoscopic cholecystectomy with even entry point through horizontal incision while those in group B had vertical incision for epigastric port. Laparoscopic cholecystectomy was done in all cases as per protocols of the hospital. Regarding outcome in both groups, we assessed for need for electrocautery, need to extend the incision, blood loss and patient's satisfaction. All the patients were managed as per protocols of the department post-operatively and were discharged accordingly. All data were analyzed using SPSS version 20 calculating mean ± SD for quantitative variables and frequency for qualitative variables. Outcome variables were compared in both groups accordingly using chi-square test and student's t-test taking P>0.05 as significant.

RESULTS

The mean age of patients in both groups was comparable. Also most of the patients in both groups were females. Most of them were illiterate and belonged to poor socioeconomic status. All the demographic data of patients in both groups is given in Table-I. Regarding our outcome variables, electrocautery for bleeding control was required in significantly more number of patients in group A than group B. Incision extension was required in higher number of patients in group A; however difference was not significant. Also secondary intervention after incision extension with electrocautery or suture ligation was also higher in frequency in group A and patients in group A were more satisfied than those in group B. In group A, blood loss was 4.62 ± 2.64 ml in group A while in group B it was 1.70 ±0.81 ml (Table-II).

DISCUSSION

Laparoscopic cholecystectomy has for the most part supplanted the old methodology of open cholecystectomy for cholelithiasis. Newer technologies and strategies are being employed to decrease tissue injury and enhance cosmesis following laparoscopic cholecystectomy.[5] There is an inclination towards limiting the quantity of incisions, for example, natural transluminal endoscopic surgery (NOTES) and single-port laparoscopic cholecystectomy (SPLC).[6] Numerous case series have shown reduced morbidity and better cosmesis in SPLC.[7] Bleeding from port site may pose a problem to the surgeon at times which needs extension of the wound as bleeding point is usually deeper; hence results is a larger scar and poor cosmesis. This is more critical in obese patients and those taking Aspirin and undergoing emergency cholecystectomy.[4,8-10] In our study, we compared horizontal and vertical incisions for epigastric port cut and Vertical incision used for epigastric port found to lesser trauma to vessels and electrocautery use and incision extended than horizontal incision. It is also seen that incision extension with electrocautery use or suture ligation of bleeding vessel use was also less in vertical group. Blood loss was remarkably less in vertical group than in horizontal one.

	Group A	Group B
Age (in years) Mean ± SD	48.28 ± 11.89	45.34 ± 9.48
Gender (n) Male Female	 09 (18%) 41 (82%)	 12 (24%) 38 (76%)
Educational status Illiterate Upto Matriculation Matric & above	 23 (46%) 19 (38%) 8 (16%)	 19 (38%) 16 (32%) 15 (30%)
Socioeconomic status Poor Middle Higher	 22 (44%) 15 (30%) 13 (26%)	 31 (62%) 13 (26%) 6 (22%)

Table-I. Demographic details of patients in both groups

	Group A	Group B	P Value
Electro Cautery Required Not Required	 15 (30%) 35 (70%)	 4 (8%) 46 (92%)	0.005
Incision Extension Required Not Required	 04 (8%) 46 (92%)	 1 (2%) 49 (98%)	0.20
Incision required with Intervention Required Not Required	 04 (8%) 46 (92%)	 1 (2%) 49 (98%)	0.20
Patient satisfaction Happy Not happy	 40 (80%) 10 (20%)	 38 (76%) 12 (24%)	0.41
Blood loss (ml)	4.62 ± 2.64	1.70 ± 0.81	0.000

Table-II. Comparison of outcome variables in both groups

CONCLUSION

In our study, vertical incision use for epigastric port insertion is far better in terms of bleeding control, less blood loss when compared with horizontal incision in laparoscopic cholecystectomy. However cosmetic outcome of both incisions was not much variable, patients were happy with scar in both groups. We recommend vertical incision for Laparoscopic procedures as it has less prevalence of blood loss, use of electrocautery and less chance of extension of incision.

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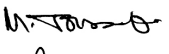
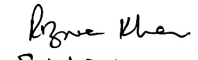
1	M. Touseef Asghar	Surgeon Writer	
2	Rizwan Ahmad Khan	Surgeon Writer	
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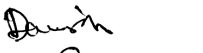
4	Danish Imtiaz	Data collection	
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