



**ORIGINAL RESEARCH PAPER**

**General Surgery**

**POST OPERATIVE PAIN ASSESSMENT IN PATIENTS UNDERGOING LAPAROSCOPIC CHOLECYSTECTOMY**

**KEY WORDS:** Gallstone disease, gallbladder(GB), Laparoscopic cholecystectomy (LC), hepatobiliary disease, visual analogue scale (VAS).

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**ABSTRACT** Gallstone disease remains one of the major causes of abdominal morbidity and mortality through the world. Gallstone disease is a chronic recurrent hepatobiliary disease, the basis for which is the impaired metabolism of cholesterol, bilirubin and bile acids, which is characterized by the formation of gallstones in the hepatic bile duct, common bile duct, or gallbladder(GB). Laparoscopic cholecystectomy (LC), introduced in 1987, is now the preferred method of cholecystectomy. In the present study the postoperative pain was evaluated using visual analogue scale (VAS).

**INTRODUCTION**

Gallstone disease remains one of the major causes of abdominal morbidity and mortality through the world. Gallstone disease is a chronic recurrent hepatobiliary disease, the basis for which is the impaired metabolism of cholesterol, bilirubin and bile acids, which is characterized by the formation of gallstones in the hepatic bile duct, common bile duct, or gallbladder(GB). Laparoscopic cholecystectomy (LC), introduced in 1987, is now the preferred method of cholecystectomy. In the present study the postoperative pain was evaluated using visual analogue scale (VAS). Ahmad et al (2015) conducted a study to compare GB retrieval through umbilical versus subxiphoid port in patients undergoing LC in terms of time taken and postoperative pain. Sixty patients with mean age 48.3±6.55 years were included and randomly assigned. There came out a non-significant difference in time for GB delivery (p value 0.109) and post-operative pain score at 24 hours in both groups (p value=0.280). The authors concluded that both ports were equally efficient in terms of time taken and comparable in postoperative pain score reduction.

**Observation**

**Port Site Pain (Visual Analogue Scale) (N=100)**

Port of extraction	Score	Day-0	Day-1
		At 8:00 PM	At 8:00 AM
		n(%)	n(%)
Epigastric port (2.33±1.07)	1	13(26%)	28(56%)
	2	18(36%)	20(40%)
	3	11(22%)	2(4%)
	4	7(14%)	0
	5	1(2%)	0
	6 and above	0	0
Umbilical port (1.74 ±0.77)	1	22(44%)	32(64%)
	2	20(40%)	17(34%)
	3	7(14%)	1(2%)
	4	1(2%)	0
	5 and above	0	0

**Mean Score Of Port Site Pain (Visual Analogue Scale) (N=100)**

		Epigastric Port	Umbilical Port	Mean Difference	P-value
Mean VAS pain scores at time intervals (mean ± SD)	Day 0	2.33±1.07	1.74 ±0.77	0.59±0.18	0.002
	Day 1	2.21± 0.98	1.56± 0.21	0.65±0.77	<0.001

The mean score of pain in the epigastric port group was 2.33 at Day 0 and 2.21 at Day 1. The mean score of pain in the

umbilical port group was 1.74 at Day 0 and 1.56 at Day 1. There was a greater difference in the mean score of pain in the umbilical port group (p<0.001)

**DISCUSSION**

In the present study the mean visual analogue scale (VAS) score in epigastric port group on the day of surgery was 2.33 whereas the mean VAS score in umbilical port group was 1.74. In the epigastric port group the mean VAS score at 24 hours was 2.21 and the mean VAS score in umbilical port group was 1.56 at the same time. The difference in 24 hour postoperative pain score in epigastric port group and umbilical port group was statistically significant (p value <0.001).

In present study higher pain scores were observed at all measured time intervals for the epigastric port group as compared with the umbilical port group. The difference in the pain scores between the umbilical port and the epigastric port group was less than or equal to 0.65, higher for epigastric port group than the umbilical port group on visual analogue scale (VAS) at all measured time intervals which is in concordance with the study conducted by Siddiqui et al, where port-site pain scores were equal to or more than 0.9 (P < 0.01) higher for the epigastric port group than the umbilical port group. The VAS score in the study conducted by Bashir et al, came out to be 3.54 in epigastric port group while 3.1 in umbilical port group and was statistically non-significant (p value =0.089). This difference in VAS score in the present study and study by Bashir et al, may be due to individual pain perception.

Kaya et al, observed that the postoperative pain in terms of VAS score was significantly lower for epigastric port group on the postoperative day 1(p=0.019). These findings are not in similar lines with our study. However, Hajong et al, also found that port-site pain scores were equal to or more than 1.1 (P < 0.001) higher for the epigastric port group. This could be explained by the fact that the umbilical port is inserted by an open technique, making a 5-mm stab incision on the sheath, which gives wider space for the retrieval of the GB, with less traction of the sheath and parietal peritoneum and therefore less pain, whereas epigastric port is inserted by blunt force, injuring the rectus sheath, passes through a longer tract, leading to more chances of hematoma formation and therefore increased pain. Moreover, the retrieval of the GB through the epigastric port will cause excessive traction on the parietal peritoneum and rectus muscle, inciting the nerve fibers, leading to increased pain perception.

**CONCLUSION**

- In the present study the postoperative pain was evaluated using visual analogue scale (VAS). The mean VAS score on the day of surgery was 2.33 and 1.74 in the epigastric and

umbilical port group respectively. The mean VAS score at 24 hours was 2.21 and 1.56 in epigastric and umbilical port respectively (p value <0.001 significant).

#### REFERENCES

1. Johnston DE, Kaplan MM. Pathogenesis and treatment of gallstones. *N Engl J Med.* 1993;328:412-21.
2. Belousov Yu V. *Pediatric Gastroenterology. Up-to-date Guide.* Moscow: Exma; 2006: 112.
3. Johnston DE, Kaplan MM. Pathogenesis and treatment of gallstones. *N Engl J Med.* 1993;328:412-21.
4. Belousov Yu V. *Pediatric Gastroenterology. Up-to-date Guide.* Moscow: Exma; 2006: 112.
5. Ahmad M.S., Javed M.U., Qureshi A.R.Z. Gallbladder retrieval in three ports laparoscopic cholecystectomy: umbilical port versus subxiphoid port. *Pak J Med Health Sci.* 2015;9:769-771.
6. Bashir A, Qureshi A.U., Afzal S. Comparison of gallbladder retrieval through umbilical port versus subxiphoid port in laparoscopic cholecystectomy. *Pak J Med Health Sci.* 2015;9:731-733.
7. Kaya C, Bozkurt E, Yazici P. The impact of gallbladder retrieval from an epigastric vs. umbilical port on trocar-site complications A prospective randomized study. *Ann Ital Chir.* 2017;88:326-329. PMID: 29051399.
8. Hajong R, Dhal MR, Natung T, Khongwar D, Jyoti AB, Newme K: A comparative study of postoperative portsite pain after gallbladder retrieval from umbilical versus epigastric ports in laparoscopic cholecystectomy. *J Family Med Prim Care.* 2019;8:1617-20.