



ORIGINAL RESEARCH PAPER

General Surgery

COMPARATIVE STUDY OF POST OPERATIVE PAIN RELIEF IN LAPAROSCOPIC CHOLECYSTECTOMY WITH PORT SITE AND INTRAPERITONEAL INSTILLATION OF 0.5% BUPIVACAINE WITH ADRENALINE AND PLACEBO

KEY WORDS: Laparoscopic cholecystectomy, Post operative, Pain, Instillation, Port, Intraperitoneal, Bupivacaine

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ABSTRACT
Introduction : Postoperative pain is variable in intensity, character, duration and is the main factor delaying discharge of patients undergoing day-care procedures including laparoscopy and hence adding to hospital cost and stay. Optimal management has a potential for shortening of hospital stay and for speeding up of recovery. **AIM :** Comparing the effect of port site and intraperitoneal instillation of 0.5% bupivacaine with adrenaline versus saline for post-operative analgesia in laparoscopic cholecystectomy. To assess the need of rescue analgesics in post- operative period in both groups. **Material & Method :** A comparative study to be performed on 50 cases receive 40 mls of 0.5% bupivacaine as intraperitoneal infiltration and local infiltration of 20 mls of 0.5% bupivacaine in the port sites (5 ml infiltration in each port) versus 50 cases receive 40 ml of normal saline intraperitoneally. **Discussion :** Reduction in post-operative pain with better cosmesis and early return to work have been the goals to improve cost effectiveness and patient satisfaction. **Conclusion :** We conclude that instillation of local anaesthetic drug intraperitoneally & Port site local anaesthetic agent injection has added benefits in post operative pain.

1. Introduction

Diseases of the Gallbladder constitute a majority of digestive tract disorders. Among these, gall stone disease is the most common biliary pathology. It has been noted that people living in the Indo-Gangetic belt are highly susceptible to the formation of gall stones, so much so that cholecystectomy is the single most commonly performed surgical procedure in this part of the world. Laparoscopic cholecystectomy provides a safe and effective treatment for most patients with symptomatic gall stones. The benefit of earlier return of bowel function, less post operative pain, improved cosmesis, shorter length of hospital stay, earlier return to full activity, decreased overall cost were immediately appreciated.

Postoperative pain is variable in intensity, character, duration and is the main factor delaying discharge of patients undergoing day-care procedures including laparoscopy and hence adding to hospital cost and stay.

Local agents can have an opioid sparing effects thus reducing the nausea and vomiting commonly encountered after general anesthesia. This is how they'll achieve the criteria for early discharge of patient from hospital.

2. Aim

Comparing the effect of port site and intraperitoneal instillation of 0.5% bupivacaine with adrenaline versus saline for post-operative analgesia in laparoscopic cholecystectomy.

3. Objectives

To assess the need of rescue analgesics in post- operative period in both groups.

4. Materials & Methods

A comparative study to be performed on 50 cases receive 40 mls of 0.5% bupivacaine as intraperitoneal infiltration and local infiltration of 20 mls of 0.5% bupivacaine in the port sites (5 ml infiltration in each port) versus 50 cases receive 40 ml of normal saline intraperitoneally admitted to surgical ward of Mahatma Gandhi Hospital Jaipur over a period of next 2 years.

Type of study: A randomized controlled trial.

Period of study: December 2018 to October 2020

Place of study: Mahatma Gandhi Medical College & Hospital, Jaipur.

SUBJECT SELECTION:

Sample size: 100 patients

Period of study: December 2018 to October 2020

Subjects from both sexes will be recruited.

INCLUSION CRITERIA:

1. All patients in whom elective laparoscopic cholecystectomy is planned.
2. Age above 18years.

EXCLUSION CRITERIA:

1. Patient with diabetes mellitus were excluded because of their pain threshold which is altered due to neuropathies.
2. Patients who received opioids or tranquilizers for more than one week prior to laparoscopic cholecystectomy were excluded.
3. Patients were excluded from the study if the operation was converted from laparoscopic cholecystectomy to open cholecystectomy and if intraperitoneal drain was placed due to any reason.

5. Result

Table 1: VISUAL ANALOGUE SCALE score

Time	VAS score Group-A		VAS score Group-B		t- value	p-value
	Mean	SD	Mean	SD		
0 Hr	2.74	0.44	3.74	0.44	11.28	0.01
3 Hr	3.74	0.44	4.50	0.50	7.99	0.01
6 Hr	4.48	0.50	4.74	0.54	2.73	0.03
12 Hr	5.00	0.72	4.74	0.82	1.66	0.09
24 Hr	5.74	0.44	5.48	0.88	1.82	0.06

Table 1 shows that there was significantly lower VAS score in group-A as compare to group-B from 0 hr to 6 hr after surgery. At 12 hr and 24 hr, VAS score was higher in group-A as compare to group-B.

Table 2: verbal rating score

Time	VAS score Group-A		VAS score Group-B		t- value	p-value
	Mean	SD	Mean	SD		
0 Hr	1.96	0.69	2.50	0.50	4.42	0.01
3 Hr	2.96	0.68	3.50	0.51	4.43	0.01
6 Hr	3.18	0.50	3.52	0.44	2.73	0.01
12 Hr	3.22	0.41	3.50	0.50	3.01	0.03
24 Hr	3.49	0.51	3.74	0.45	2.74	0.01

Table 2 shows that there was significantly lower VRS score in group-A as compare to group-B from 0 hr to 24 hr after surgery.

Table 3: Hospital stay

Hospital stay in days	VAS score Group-A		VAS score Group-B		t- value	p-value
	Mean	SD	Mean	SD		
0 Hr	3.04	0.67	3.24	3.43	1.96	0.06

In present study, mean hospital stay in group-A was 3.04 ±0.67 days and group-B was 3.24±0.43 days. The hospital stay wise difference in both groups was found statistically Insignificant.

5. Discussion

Instillation of local anaesthetic solution intraperitoneally, as a mode of providing postoperative analgesia, has been studied extensively. It has the added advantage of early ambulation, reduced incidence of postoperative nausea vomiting and reduces the use of parental opioids and NSAIDs.

In our study we observed that the significantly lower VAS score in group-A as compare to group-B from 0 hr to 6 hr after surgery. At 12 hr and 24 hr, VAS score was higher in group-A as compare to group-B.

Mraovic and coworkers used 0.5% of Bupivacaine intra peritoneally after CO2 insufflation and after the dissection. They provided excellent analgesia upto 8 hours with less analgesic consumption.

Malhotra et al in their study compared 0.125% bupivacaine with saline intraperitoneally. Mean VAS score at 2nd and 4th hour was 2,2 for Bupivacaine and 6,4 for saline group, which was similar to our study.

Gupta A et al with his colleagues compared Ropivacaine 0.5% with saline injected intra peritoneally near the gall bladder fossa. They kept the catheter at the gall bladder bed through which 20 ml Ropivacaine was given after the dissection. When compared with saline group, in patients who had Ropivacaine in the post operative period, had good VAS and better pain relief upto 4th post operative hour.

Rajni Gupta et al compared Bupivacaine vs Bupivacaine with Fentanyl and saline. Patients who have received Bupivacaine with Fentanyl, showed VAS score 40.3 ± 7.4 compared with saline 50.1± 78. They proved that there was a narrow margin between the VAS score of both the groups. This study strongly supports our study, in which the median VAS score for Bupivacaine group was 2.82 over 24 hours and in Ropivacaine group median VAS score was 3.15.

Conclusion

We conclude that instillation of local anaesthetic drug intraperitoneally is useful for post operative pain management

for the patients who undergo laparoscopic surgeries.

Port site local anaesthetic agent injection has added benefits in post operative pain.

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