Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies ***NLM ID:*** *101716117*

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Index Copernicus value = 85.10

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Comparative evaluation of general anaesthesia and spinal anaesthesiaamong patients undergoing laparoscopic cholecystectomy

[1]Pushpendra Kumar, [2]Pallavi Shende

[1]Associate Professor, Department of General Surgery, Narayan Medical College, Sasaram, Bihar, India
[2]Assistant Professor, Department of Anaesthesiology, Narayan Medical College, Sasaram, Bihar, India

ABSTRACT:
Background: The present study was conducted for comparing the efficacy of general anaesthesia and spinal anaesthesia among patients undergoing laparoscopic cholecystectomy. **Materials & methods:** A total of 100 patients scheduled to undergo laparoscopic cholecystectomy were enrolled. The patients were divided into two groups of 50 each: group 1 receiving general anesthesia and group 2 receiving spinal anesthesia. Postoperative pain was assessed using the Visual Analogue Scale (VAS) after completion of procedure. Outcome measures were compared. All the results were recorded and analysed using SPSS software. **Results:** Mean operative time among the patients of group 1 and group 2 was 73.2 minutes and 70.1 minutes respectively. Mean hospital stay among patients of group 1 and group 2 was 40.56 hours and 31.46 hours respectively. Mean VAS was significantly higher among patients of group 1. **Conclusion:** Spinal anesthesia was better than general anesthesia in terms of postoperative pain relief
Key words: General anaesthesia, Spinal anaesthesia, Laparoscopic cholecystectomy

Received: 16-11-2019 Accepted: 20-12-2019

Corresponding author: Pallavi Shende, Assistant Professor, Department of Anaesthesiology, Narayan Medical College, Sasaram, Bihar, India

This article may be cited as: Kumar P, Shende P. Comparative evaluation of general anaesthesia and spinal anaesthesiaamong patients undergoing laparoscopic cholecystectomy. J Adv Med Dent Scie Res 2020;8(1):353-355.

INTRODUCTION

Laparoscopic cholecystectomy (LC) has become the gold standard for the surgical treatment of symptomatic cholelithiasis and has gained worldwide acceptance. It is a minimally invasive procedure with a significantly shorter hospital stay and a quicker convalescence compared with the classical open cholecystectomy. In abdominal and lower extremities surgeries, SA is mainly employed by a single drug and comprises some advantages such as less bleeding, and reduces venous pressure in the surgery field.Spinal anaesthesia and general anaesthesia can be used interchangeably in selected and less extensive lumbar spine operations.[1, 2]

Each has advantages and disadvantages and may exert distinctive effects on peri-operative outcome. Potential advantages of spinal anaesthesia include no airway instrumentation, profound analgesia, stable haemodynamics, less surgical blood loss and thus improved operating conditions; however, reported disadvantages include intra-operative anxiety, cough, hiccups and movement.[3, 4] In contrast, general anaesthesia renders the patient motionless throughout the procedure and provides a secure airway, although it may lead to haemodynamic instability and greater intra-operative blood loss, analgesic requirements and postoperative nausea and vomiting.[5, 6]The present study was conducted for comparing the efficacy of general anaesthesia and spinal anaesthesia among patients undergoing laparoscopic cholecystectomy

MATERIALS & METHODS

The present study was conducted for comparing the efficacy of general anaesthesia and spinal anaesthesia among patients undergoing laparoscopic cholecystectomy. A total of 100 patients scheduled to undergo laparoscopic cholecystectomy were enrolled. Complete demographic and clinical details of all the patients was obtained. The patients were divided into two groups of 50 each: group 1 receiving general anesthesia and group 2 receiving spinal anesthesia.Laparoscopic cholecystectomy was performed using the same techniques in both the groups with standard 4 trocar insertion. Continuous monitoring all the variables was done. Postoperative pain was assessed using the Visual Analogue Scale

(VAS) after completion of procedure. Outcome measures were compared. All the results were recorded and analysed using SPSS software.

RESULTS

Mean age of the patients of group 1 and group 2 was 44.2 years and 46.2 years respectively. Majority proportion of patients of both the study groups were males. Mean operative time among the patients of group 1 and group 2 was 73.2 minutes and 70.1 minutes respectively. Mean hospital stay among patients of group 1 and group 2 was 40.56 hours and 31.46 hours respectively. Mean VAS was significantly higher among patients of group 1.

Table 1: Comparison of clinical findings

Variable	Group 1	Group 2	p-value
Mean operative time (minutes)	73.2	70.1	0.7781
Mean hospital stay (hours)	40.56	31.46	0.001*

*: Significant

Table 2: Comparison of VAS

Mean VAS	Group 1	Group 2	p-value
4 hours	3.7	1.2	0.000*
8 hours	3.5	1.1	0.001*
12 hours	2.3	0.9	0.001*

*: Significant

DISCUSSION

Laparoscopic cholecystectomy (LC) has become the gold standard for the surgical treatment of symptomatic cholelithiasis and has gained worldwide acceptance. It is a minimally invasive procedure with a significantly shorter hospital stay and a quicker convalescence compared with the classical open cholecystectomy. LC is conventionally done under general anaesthesia (GA) and may be associated with postoperative pain and nausea and vomiting (PONV).[6-9]The present study was conducted for comparing the efficacy of general anaesthesia and spinal anaesthesia among patients undergoing laparoscopic cholecystectomy

Mean age of the patients of group 1 and group 2 was 44.2 years and 46.2 years respectively. Majority proportion of patients of both the study groups were males. Mean operative time among the patients of group 1 and group 2 was 73.2 minutes and 70.1 minutes respectively.Yu, G. et al identified relevant articles published in English by searching PubMed, Embase, Web of Knowledge, and the Cochrane Controlled Trial Register from January 1, 2000 to December 1, 2014. Reference lists of the retrieved articles were reviewed to identify additional articles. Seven appropriate RCTs were identified from 912 published articles. Seven hundred and twelve patients were treated, 352 in SA group and 360 in GA group. LC under SA was superior to LC under GA in postoperative pain within 12 h and postoperative complications. The GA group was superior to SA group in postoperative urinary retention. There were no significant differences in operating time between two groups.SA as the sole anaesthesia technique is feasible, safe for elective LC.[10]

Mean hospital stay among patients of group 1 and group 2 was 40.56 hours and 31.46 hours respectively. Mean VAS was significantly higher among patients of group 1.V, K., Pujariet al; conducted study of LC, performed under spinal anesthesia to assess its safety and feasibility in comparison with GA.Fifty patients with symptomatic gallstone disease and American Society of Anesthesiologists status I or II were randomised to have LC under spinal (n = 25) or general (n = 25) anesthesia. In the SA group six patients (24%) complained of shoulder pain, two patients required conversion to GA (8%) as the pain did not subside with Fentanyl. None of the patients in the SA group had immediate postoperative pain at operated site. Only two (8%) patients had pain score of 4 at the operative site within eight hours requiring rescue analgesic. One patient had nausea but no vomiting (4%). All the patients (100%) in the GA group had pain at operated site immediately after surgery and their pain score ranged from 4-7, all patients received rescue analgesic before shifting to the ward. In the first 24h tramadol required as rescue in the GA group was 82±24 mg which was significantly higher than the SA group requiring only 30±33.16 mg. Although, the GA group had more patients experiencing postoperative nausea & vomiting it was not statistically significant.SA as the sole anaesthesia technique is feasible, safe and cost effective for elective LC.[11]

CONCLUSION

Spinal anesthesia was better than general anesthesia in terms of postoperative pain relief

REFERENCES

1. Jun-Ou J, Lojanapiwat B. Supracostal access: does it affect tubeless percutaneous nephrolithotomy efficacy and safety? Int Braz J Urol. 2010;36(2):171–6.
2. Kuzgunbay B, Turunc T, Akin S, Ergenoglu P, Aribogan A, Ozkardes H. Percutaneous nephrolithotomy under general versus combined spinal-epidural anesthesia. J Endourol. 2009;23(11):1835–8.
3. Karacalar S, Bilen CY, Sarihasan B, Sarikaya S. Spinal-epidural anesthesia versus general anesthesia in the management of percutaneous nephrolithotripsy. J Endourol. 2009;23(10):1591–7.
4. Ali Y, Elmasry MN, Negmi H, Al Ouffi H, Fahad B, Rahman SA. The feasibility of spinal anesthesia with sedation for laparoscopic general abdominal procedures in moderate risk patients. Middle East J Anaesthesiol. 2008;19:1027–39.
5. Gautam B. Spinal anesthesia for laparoscopic cholecystectomy: A feasibility and safety study. Kathmandu Univ Med J (KUMJ) 2009;7:360–8.
6. Critchley LA, Critchley JA, Gin T. Haemodynamic changes in patients undergoing laparoscopic

cholecystectomy: Measurement by transthoracic electrical bioimpedance. Br J Anaesth. 1993;70:681–3.
7. Calvo Soto P, Martinez Contreras A, Hernandez BT, Peraza Garay FJ, Vasquez C. Spinal-general anesthesia reduces neuro endocrine stress in laparoscopic cholecystectomy. J Int Med Res. 2012;40:657–65.
8. Naguib M, Samarkandi AH. Premedication with melatonin: A double-blind, placebo-controlled comparison with midazolam. Br J Anaesth. 1999;82:875–80.
9. Wong MY. Evolving technique of percutaneous nephrolithotomy in a developing country: Singapore General Hospital experience. J Endourol. 1998;12(5):397–401.
10. Yu, G., Wen, Q., Qiu, L., Bo, L., & Yu, J. (2015). Laparoscopic cholecystectomy under spinal anaesthesia vs. general anaesthesia: a meta-analysis of randomized controlled trials. BMC anesthesiology, 15, 176.
11. V, K., Pujari, V. S., R, S. M., Hiremath, B. V., & Bevinaguddaiah, Y. (2014). Laparoscopic Cholecystectomy Under Spinal Anaesthesia vs. General Anaesthesia: A Prospective Randomised Study. Journal of clinical and diagnostic research : JCDR, 8(8), NC01–NC4.