



SPINAL ANAESTHESIA VS GENERAL ANAESTHESIA IN LAPAROSCOPIC UROSURGERY

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Abstract: Spinal anaesthesia (SA) has shown promise as a safe substitute to general anesthesia (GA), which is the standard method for performing laparoscopic cholecystectomy (LC)[2]. This research set out to evaluate the relative merits of general anesthesia vs spinal anesthesia for the purpose of facilitating laparoscopic cholecystectomy. Using low tension pneumoperitoneum with CO₂ and 60 patients slated for elective laparoscopic cholecystectomy (LC) procedures, the research compared the effects of general anesthesia (GA) and spinal anesthesia (SA). Each group included of 25 patients. We used propofol, fentanyl, atracurium, sevoflurane, and tracheal intubation in our general anesthesia case (n=25). To reach a sensory level of T₃, 25 patients undergoing spinal anesthesia were given 15 mg of hyperbaric bupivacaine and 20 µg of fentanyl. Cost, surgical discomfort, complications, recovery, patient satisfaction, and intraoperative hemodynamic parameters were compared between the two groups. Two groups of patients were randomly assigned to undergo anaesthesia induction; twenty five individuals had spinal anesthesia and twenty five underwent general anesthesia. At 2, 4, and 6 hours post-procedure, patients in the spinal anesthesia group reported far less pain than those in the general anesthesia group. Comparing the two methods, spinal anesthesia was far less expensive than general anesthesia. Within one day, all patients were cleared for release.

In conclusion, spinal anesthesia is the preferred method of anesthesia for laparoscopic cholecystectomy since it is safe,

practical, and does not need any changes to the technique. Additionally, it offers many benefits over general anesthesia.

Key words: spinal, general, anesthesia.

INTRODUCTION

Since its introduction in 1988, laparoscopic cholecystectomy has been the surgical treatment of choice for cholelithiasis and has received widespread approval across the globe [1,2]. On rare occasions, laparoscopic cholecystectomy has been performed under spinal anesthesia alone. However, these cases were patients who were not suitable for general anesthesia, such as those with chronic obstructive pulmonary disease [3]. Postoperative nausea, vomiting, and pain (PONV) are possible side effects of LC, which is often performed under general anesthesia [2]. Spinal anaesthesia offers several benefits over general anesthesia and is a frequently used anaesthetic treatment with a favorable safety profile. Benefits include decreased postoperative discomfort, the patient's ability to ambulate quicker than with general anesthesia, and the patient's awareness and orientation at the completion of the treatment [2]. Additionally, compared to general anesthesia, selective spinal anesthesia had a lower incidence of nausea and vomiting [6].

Results and Discussion:

Laparoscopic cholecystectomies are best performed under general anesthesia. For laparoscopic cholecystectomies, regional anaesthesia has shown to be a safe, cost-effective, and effective method of pain management after the procedure, according to a number of international studies. Laparoscopic cholecystectomy may be safely performed under SA in this investigation; no need to convert to GA was found. However, there are a few issues

related to SA, such as an increased intraabdominal pressure (IAP), which may lead to the regurgitation of stomach contents. Concerns of hypotension related to peripheral vasodilatation resulting in decreased venous return, increased intraocular pressure (IAP), and the reverse trendelenberg posture have been voiced in relation to SA(1,2)

Intravenous fluids and 6 mg boluses of ephedrine were used to treat hypotension in 10 instances (33.33% of the total). Hypotension was found to occur in 36% of cases, according to Kalaivani V. et al. (3). In their study, Sinha et al. (4) found that hypotension occurred in 20.5% of cases. It is well-known that spinal anesthesia may cause intraoperative hypotension; however, Tzovares et al. demonstrated that this complication is manageable and had no impact on the intended surgery(5)

Laparoscopic cholecystectomy under SA had a mean/median operation time of 16.4 to 47.4 minutes in previous studies (6-8). We conclude that optimal motor relaxation of the abdominal muscles did not substantially increase the operating time as there was no statistically significant difference in the mean operating time between the SA and GA groups. Consistent findings were also seen by Bessa et al.(6) .

While most patients do OK under spinal anesthetic for laparoscopic cholecystectomy, others report excruciating discomfort around the point of their right shoulder throughout the procedure. The CO₂ pneumoperitoneum is likely to blame for the pain and discomfort felt across the right shoulder by irritating the diaphragm. We found that reassurance and maintaining an

intraabdominal pressure of 8-10 mmHg helped 18 individuals (or 60%) who reported discomfort at the point of their right shoulder. None of the severe cases that received intravenous administration of ketamine (1 mg/kg) and midazolam (0.02 mg/kg) were converted to GA. Some 24% of patients with right shoulder discomfort during surgery were described by Kalavani V et al.(3); 8% of those patients needed to be converted to GA. Pain at the apex of the right shoulder was described in 10% of patients by Hamad et.al.(7) during surgery. In seven instances, or 23% of the total, Mehta et al.(9) noted right shoulder discomfort. Fifthly, Tzoveres et al. Out of the 12.3% who had right shoulder tip discomfort, none of them needed to be converted to GA. Our findings are consistent with those of Yuksaket al.(10), who reported right shoulder discomfort in 50% of subjects. Five patients (17.2%) needed extra diaphragm spraying with 2% lidocaine to alleviate discomfort, and three patients (10.3%) were converted to GA.

Five patients in the SA group had bradycardia during surgery, which was treated with intravenous injections of atropine (0.6 mg), but there was no statistically significant difference in MAP between the two groups.

Despite the lack of a statistically significant difference, 6 patients (20%) in the SA group had PONV, while 7 patients (23% of the total) in the GA group reported PONV. In their study, Bessa et al.(6) found that whereas 6.9% of patients in the SA group had PONV, 22.2% of patients in the GA group did as well.

The SA group saw 4 patients (13.33% of the total) with postoperative urine retention who needed catheterization. This is associated with the fact that, in some series, regional anaesthesia blocks sacral nerve fibers at a rate of up to 20% .(11)

Because of the long-acting adjuvant buprinorphine and the lingering effects of the local anaesthetic, the SA group reported much

less pain in the postoperative period than the GA group. Previous research has shown that compared to laparoscopic cholecystectomy performed under GA, SA leads to much fewer postoperative discomfort and analgesia requests .(6,8)

Spinal anaesthesia is a viable option for elective laparoscopic cholecystectomy procedures in otherwise healthy individuals, according to this research. It is also safer and allows for better postoperative management.

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