



DOCTORS' PREFERENCE FOR SPINAL ANESTHESIA FOR CHOLECYSTECTOMY

Rehab Sabah Abd-Alhusein Otaifa

M.B.Ch.B., F.I.B.M.S (**Anesthetist**)

Certificate of The Iraqi Board of Anesthesiology

Iraqi Ministry of Health, Baghdad Al-Rusafa Health Directorate, Dr. Saad AL Witry Hospital for Neurosciences, Baghdad, Iraq.

dr_rihaboteifa@yahoo.com

Dr. Reem Hashim Abdalmahdi Shuber

M.B.Ch.B.- D.A. (**Anesthetist**)

Ministry of Health, Baghdad Medical Office Al-Russafa, Al-Kindey, Teaching Hospital, Baghdad, Iraq.

Dr. Sudad Mohammed Salih AL Haddad

M.B.Ch.B.- D.A. (**Anesthetist**)

Ministry of Health, Baghdad Medical Office Al-Russafa, Al-Kindey, Teaching Hospital, Baghdad, Iraq.

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Abstract:

Laparoscopic cholecystectomy under spinal anaesthesia has been reported, as 100 patients were collected from different Hospitals in Iraq. The aim of the research is to find out whether spinal anaesthesia is safe and why doctors prefer spinal anaesthesia; All these reports included patients suffering from cholelithiasis, and the statistical analysis program SPSS SOFT AND MS EXCEL was relied on.

We have shown in a pilot study that successful and safe laparoscopic cholecystectomy with low-pressure CO pneumoperitoneum is possible under spinal anaesthesia alone and mild symptoms were found. We also found that spinal anaesthesia results in exceptionally minimal postoperative pain.

After this study, we conclude from this research that spinal anaesthesia is safe and preferable compared to standard general anaesthesia for laparoscopic cholecystectomy in suitable patients.

Keywords: Anaesthesia, cholecystectomy, spinal, BMI, pneumoperitoneum.

INTRODUCTION

Some doctors prefer to use Spinal anaesthesia because it is better than general anaesthesia, as the patient does not need to use a ventilator, and people usually regain their senses faster. Although they may have to wait for the drug to wear off [1,2].

During anaesthesia, in cholecystectomy, a series of pathophysiological changes develop that will depend on the insufflation of carbon dioxide into the abdominal cavity, resulting in changes in the circulatory, respiratory, metabolic, and in other systems, which we must take into account in order to manage and knowledge [3,4,5].

Spinal anaesthesia uses local anesthetic drugs, and the drugs are injected into the cerebrospinal fluid into the spinal cavity through a special fine needle for spinal anaesthesia and because the injection needle must reach the spinal cavity, it must be injected from the back [6,7,8,9,10].

Spinal anaesthesia has the advantage of simplicity when administered to the patient, and its effect begins quickly, as the failure rates to achieve anaesthesia are

considered low, as well as the anaesthesia stage can be reached through the minimum required dose [11,12,13,14,15], the anaesthesia is accompanied by excellent muscle relaxation to perform the surgery without disrupting spontaneous ventilation by Chest muscles, as well as one of the advantages of spinal analgesia is lower blood pressure due to blocking of the emotional system, which reduces the risk of bleeding, making it the preferred method [16,17,18,19,20]

MATERIAL AND METHOD

Patients sample

100 patients were collected from different Hospitals in Iraq. Information and demographic data, consisting of gender, history, and body mass index, were collected and analyzed statistically by relying on the program SPSS SOFT 20 and MS Excel worksheet 2016

Study design

Through cooperation with the Hospitals in collecting patients and private information, 100 patients were collected and divided into 60 women and 40 men. The cases with cholelithiasis were diagnosed and the doctors



relied on the removal of the gallbladder on spinal anaesthesia.

During the examination, the patient was examined by an anesthesiologist, and the patient's current condition, comorbidities, ongoing medications, drug allergy, and other factors describing the patient's condition were obtained.

Spinal anaesthesia is performed in a sitting or lateral position. It is important that the spine is as curved as possible, the distance between the vertebrae in this position is maximum, which facilitates puncture.

The puncture site is treated and local anaesthesia is applied to the skin, then a needle is inserted into the spine. The insertion of the needle itself is painless, as there are no nerve endings along the path of the needle at the same time, it is absolutely impossible to move, because the needle in the spine, during movement, can damage the closest tissues.

RESULTS

The samples were divided into patients who underwent spinal anaesthesia for cholecystectomy, 60 patients

The average age of the patients ranged between 24 and 60 years, as for spinal anaesthesia administration Fentanyl was used intravenously for sedation and anaesthesia, and fentanyl was used as a solution with a local anesthetic for administration into the central nervous system (into the epidural or intrathecal/spinal). It is taken with midazolam as a hypnotic for cholecystectomy

Study period

This study was conducted to find out the positive effect that spinal anaesthesia has on patients. The study period was from February 2020 to the second of March 2021.

Aim of research

This paper aims to know the advantages of spinal anaesthesia, why anesthesiologists prefer it and are safe for cholecystectomy

were women and 40 men, and the average age of men ranged between 24 to 55 years, while for women, it ranged from 28 to 60 years as shown in table 1.

Table 1- distribution of patient

Parameter	Male	Female
Frequency (N)	40	60
Max age	24	28
Min age	55	60
Mean±SD	45.5±10.2	42±11.45

Table 2- Statistics results of anaesthesia

Statistics		Duration min	Surgery time min	pneumoperitoneum
N	Valid	100	100	100



	Missing	12	12	12
Mean		40.8000	34.9500	34.6272
Median		40.0000	35.0000	35.0000
Mode		40.00	32.00 ^a	36.00
Std. Deviation		2.49848	2.02198	1.93883
Skewness		-.414	.032	-.203
Std. Error of Skewness		.241	.241	.241
Kurtosis		1.272	-1.270	-.746
Std. Error of Kurtosis		.478	.478	.478
Minimum		32.00	32.00	31.00
Maximum		45.00	38.00	38.00
Percentiles	25	39.0000	33.0000	33.3400
	50	40.0000	35.0000	35.0000
	75	42.7500	37.0000	36.0000
a. Multiple modes exist. The smallest value is shown				

Figure 2- compression (best value of duration time for *spinal anaesthesia*)

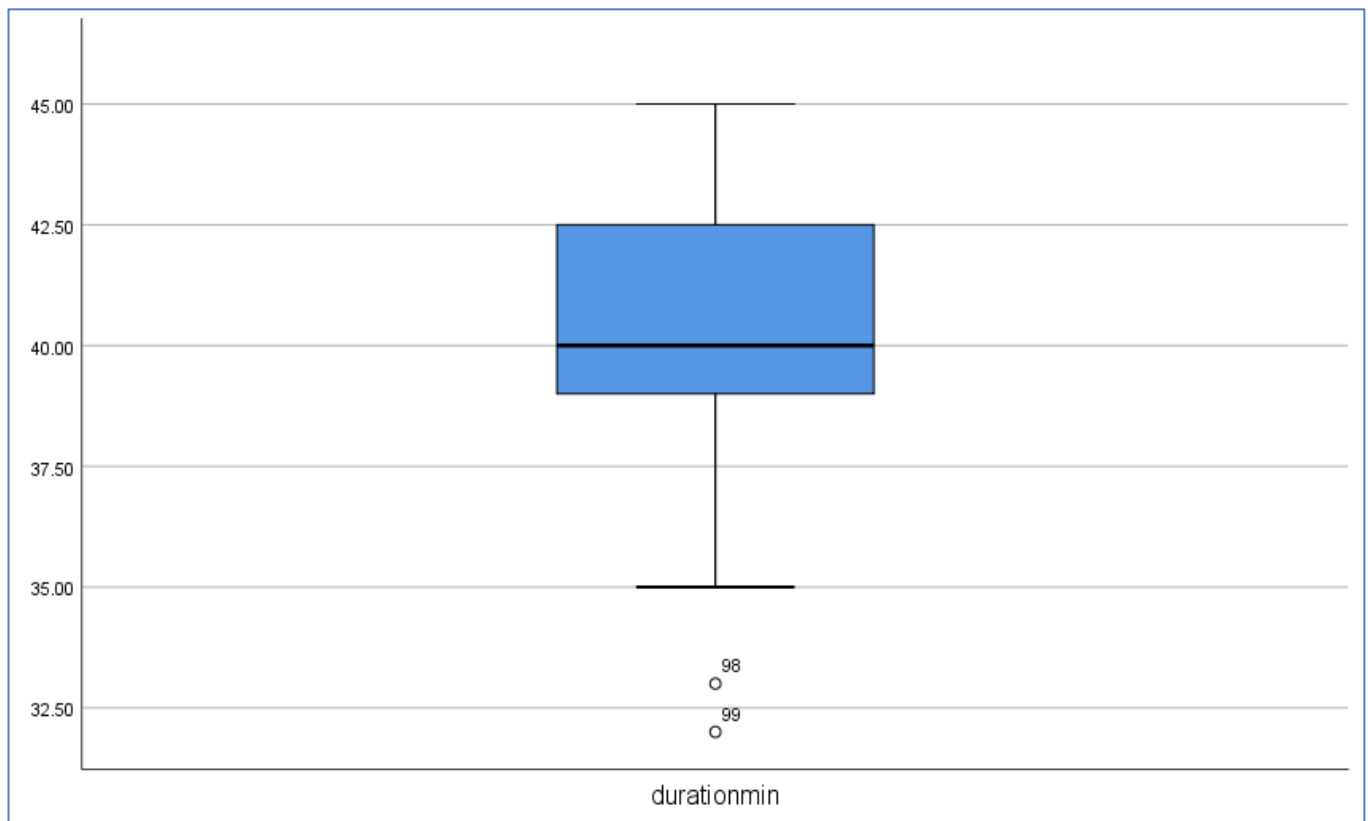




figure 3- results in the peri-operative period

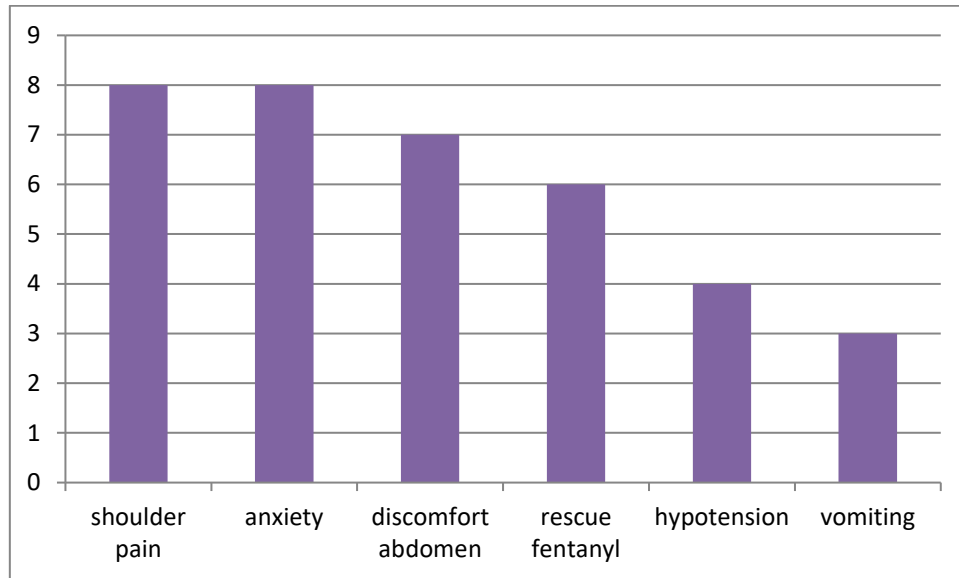


Figure 4- result of Postoperative

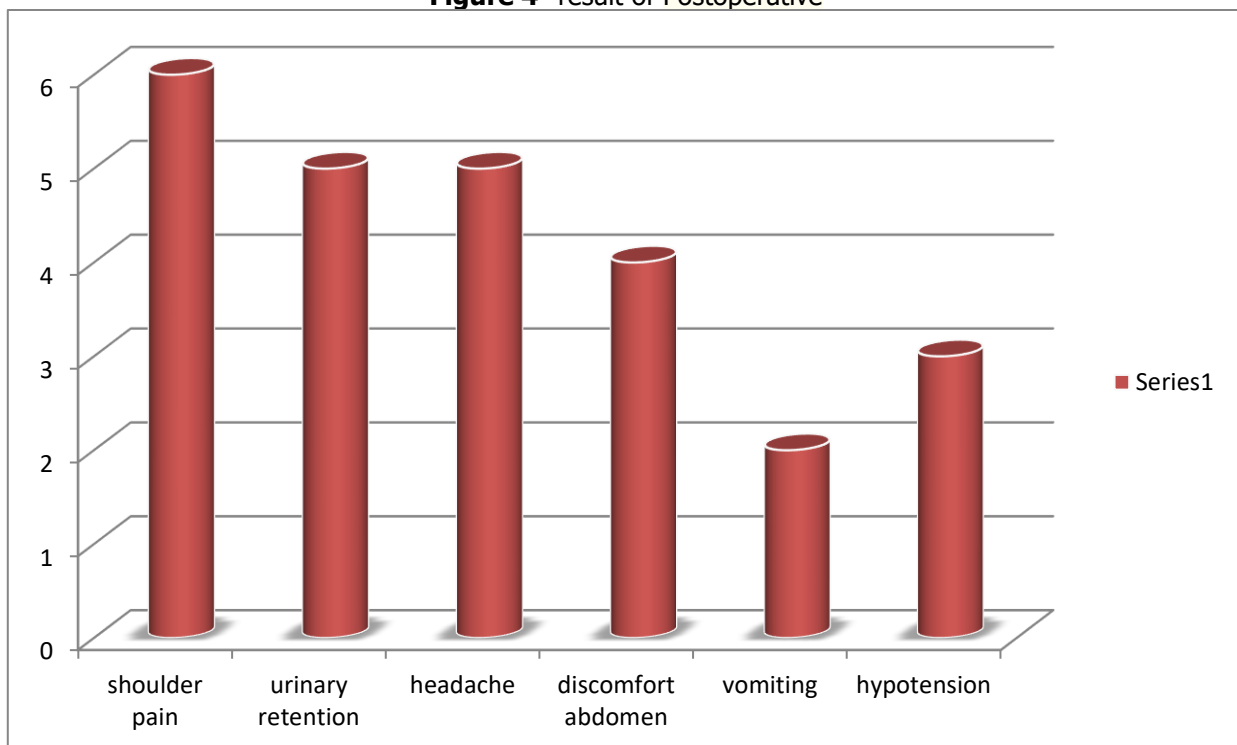
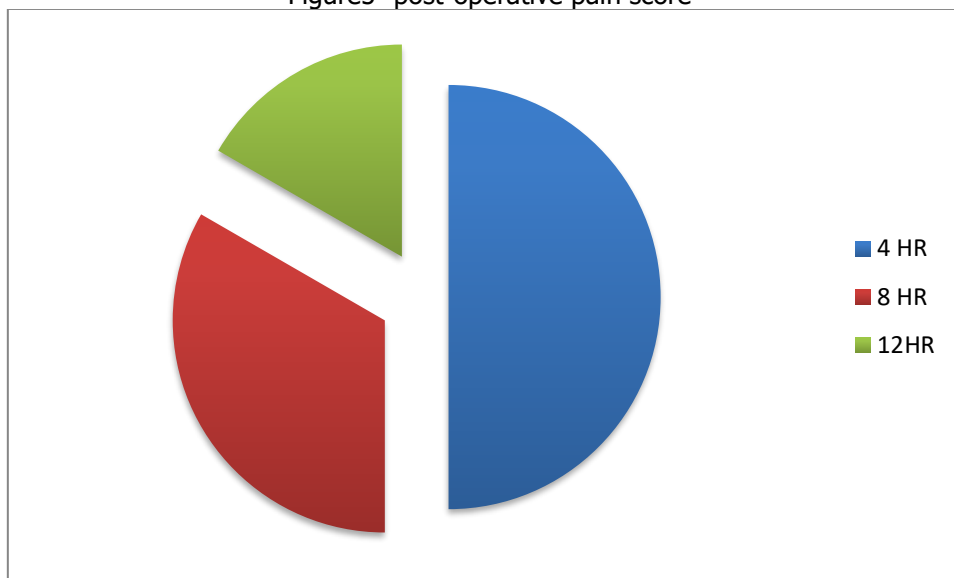


Figure5- post-operative pain score



DISCUSSION

100 patients were collected from different Hospitals in Iraq, and the patients underwent spinal anaesthesia for cholecystectomy. The main purpose of this research was to find out whether spinal anaesthesia is safe and preferable to anaesthesiologists, and we find that the mean \pm Sd in general to the age of the patients was 43.6 ± 12.3 and through Table 2, which shows the properties of anaesthesia and the surgical operation in terms of time, and we find the duration of anaesthesia was 40.8 ± 2.4 . When comparing it with previous studies, for example, Gorder Mark's study, we find that it was safe and less in time. As for the pneumonperitoneum, the mean Sd was 34.9 ± 2.02 , and also when comparing it with previous studies, we find that the time was less and there is no risk to the patient.

Spinal anaesthesia is used during surgery, which involves sedation and manipulation of the lower body. This technique involves inserting an anesthetic into the area of the spinal cord, specifically the subarachnoid space between the meninges and the spinal cord, which is filled with cerebrospinal fluid (CSF). A lot of nerve fibers pass here, which allows to stabilize and reduce the sensitivity of the lower extremities and the pelvic region.

The drug is introduced into the lumbar region, which allows to affect the area under this part of the back. By reading the results during the peripheral period of surgery, we find that shoulder pain was present for 9 patients and anxiety, in addition to the presence of simple stomach pain that does not cause concern for 8

patients and vomiting for 3 patients, and compared to the large number of patients, we find that these effects are very simple and do not call for concern.

CONCLUSION

Spinal anaesthesia is the preferred method for anaesthesiologists because it avoids general anaesthesia and spinal anaesthesia is a suitable alternative when the surgical site is suitable for spinal block, for patients and may also be beneficial when the surgical site is amenable to spinal block.

RECOMMENDATION

1. Before the surgery and anesthesia, the doctor may ask you to stop eating and drinking for some hours, as well as to stop taking blood-thinning medications a week before the anesthesia
2. You must follow the advice and instructions of the doctor because it helps your safety and ensures that no side effects occur.

REFERENCES

1. Hood DD, Curry R. Spinal versus epidural anesthesia for cesarean section in severely preeclamptic patients a retrospective survey. *Anesthesiology*. 1999;90(5):1276–1282. doi:10.1097/00000542-199905000-00009 [PubMed] [CrossRef] [Google Scholar]
2. Riley ET, Cohen SE, Macario A, Desai JB, Ratner EF. Spinal versus epidural anesthesia for cesarean section: a comparison of time efficiency, costs, charges, and complications. *Anesth Analg*. 1995;80(4):709–712.



3. McLain RF, Kalfas I, Bell GR, Tetzlaff JE, Yoon HJ, Rana M. Comparison of spinal and general anesthesia in lumbar laminectomy surgery: a case-controlled analysis of 400 patients. *J Neurosurg Spine*. 2005;2 (1):17–22. doi:10.3171/spi.2005.2.1.0017 [PubMed] [CrossRef] [Google Scholar]
4. Sinha R, Gurwara A, Gupta S. Laparoscopic surgery using spinal anesthesia. *JLS*. 2008;12 (2):133. [PMC free article]
5. Kokki H. Spinal blocks. *Paediatr Anaesth*. 2012;22 (1):56–64. doi:10.1111/j.1460-9592.2011.03693.x [PubMed] [CrossRef] [Google Scholar]
6. Bors E, Comarr AE, Moulton SH. The role of nerve blocks in management of traumatic cord bladders: spinal anesthesia, subarachnoid alcohol injections, pudendal nerve anesthesia, and vesical neck anesthesia. *J Urol*. 1950;63 (4):653–666. doi:10.1016/S0022-5347 (17)68810-4 [PubMed] [CrossRef] [Google Scholar]
7. Olawin AM, Das JM. Spinal anesthesia. *StatPearls* [Internet]. StatPearls Publishing; 2019. [Google Scholar]
8. Tuohy CEB. Continuous spinal anesthesia: its usefulness and technique involved. *Anesthesiology*. 1944;5 (2):142–148. doi:10.1097/00000542-194403000-00003 [CrossRef] [Google Scholar]
9. Obi VO, Umeora OJ. Anesthesia for emergency cesarean section: a comparison of spinal versus general anesthesia on maternal and neonatal outcomes. *Afr J Med Health Sci*. 2018;17 (1):31. doi:10.4103/ajmhs.ajmhs_33_18 [CrossRef] [Google Scholar]
10. Hodgson PS, Liu SS. New developments in spinal anesthesia. *Anesthesiol Clin North Am*. 2000;18(2):235–249. doi:10.1016/S0889-8537(05)70162-0 [PubMed] [CrossRef] [Google Scholar]
11. Mets B, Broccoli E, Brown AR. Is spinal anesthesia after failed epidural anesthesia contraindicated for cesarean section? *Anesth Analg*. 1993;77 (3):629–631. doi:10.1213/00000539-199309000-00034 [PubMed] [CrossRef] [Google Scholar]
12. Kee WDN, Khaw KS, Tan PE, Ng FF, Karmakar MK. Placental transfer and fetal metabolic effects of phenylephrine and ephedrine during spinal anesthesia for cesarean delivery. *Anesthesiology*. 2009;111 (3):506–512. doi:10.1097/ALN.0b013e3181b160a3 [PubMed] [CrossRef] [Google Scholar]
13. Heesen M, Klimek M, Hoeks SE, Rossaint R. Prevention of spinal anesthesia-induced hypotension during cesarean delivery by 5-hydroxytryptamine-3 receptor antagonists: a systematic review and meta-analysis and meta-regression. *Anesth Analg*. 2016;123 (4):977–988. doi:10.1213/ANE.0000000000001511 [PubMed] [CrossRef] [Google Scholar]
14. Horlocker TT, Wedel DJ. Neurologic complications of spinal and epidural anesthesia. *Reg Anesth Pain Med*. 2000;25 (1):83–98.
15. Horlocker TT. Complications of spinal and epidural anesthesia. *Anesthesiol Clin North Am*. 2000;18(2):461–485. doi:10.1016/S0889-8537(05)70172-3 [PubMed] [CrossRef] [Google Scholar]
16. Wedel DJ, Horlocker TT. Regional anesthesia in the febrile or infected patient. *Reg Anesth Pain Med*. 2006;31 (4):324–333. doi:10.1016/j.rapm.2006.04.003 [PubMed] [CrossRef] [Google Scholar]
17. Tarkkila PJ, Kaukinen S. Complications during spinal anesthesia: a prospective study. *Reg Anesth Pain Med*. 1991;16 (2):101–106.
18. Kilpatrick ME, Girgis NI. Meningitis—a complication of spinal anesthesia. *Anesth Analg*. 1983;62 (5):513–515. doi:10.1213/00000539-198305000-00009 [PubMed] [CrossRef] [Google Scholar]
19. Kelsaka E, Sarihasan B, Baris S, Tur A. Subdural hematoma as a late complication of spinal anesthesia. *J Neurosurg Anesthesiol*. 2003;15 (1):47–49. doi:10.1097/00008506-200301000-00008 [PubMed] [CrossRef] [Google Scholar]
20. Sonras SA, Komplikasyon GNB. Spinal subdural hematoma: a rare complication of spinal anesthesia: a case report. *Turk Neurosurg*. 2008;18 (3):324–326.