

## ORIGINAL RESEARCH

# Comparative Evaluation of Spinal Anesthesia and General Anesthesia in Inguinal Hernia Repair at a Tertiary Care Hospital

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### ABSTRACT

**Background:** The present study was conducted for evaluating and comparing the efficacy of spinal anesthesia and general anesthesia in inguinal hernia repair. **Materials & Methods:** A total of 50 patients scheduled to undergo inguinal hernia repair were enrolled. Complete demographic and clinical details of all the patients was obtained. All the patients were broadly divided into two study groups as follows: Group A: Patients undergoing inguinal hernia repair under spinal anaesthesia, and Group B: Patients undergoing inguinal hernia repair under general anaesthesia. Postoperative pain was assessed by VAS (Visual analogue scale) on a scale of 0 to 10 with 0 indicating no pain and 10 indicating maximum unbearable pain. All the results were recorded in Microsoft excel sheet and were subjected to statistical analysis using SPSS software. **Results:** Non-significant results were obtained while comparing the mean VAS at discharge among patients of the two study groups. Incidence of postoperative nausea and vomiting was significantly higher among patients of group 2 in comparison of patients of group 1. Incidence of postoperative headache was significantly higher among patients of group 2 in comparison of patients of group 1. **Conclusion:** Spinal anaesthesia could be an appropriate option for pain relief in inguinal repair, but it can't be confirmed that spinal anaesthesia is better than general anaesthesia as spinal anaesthesia is accompanied by higher incidence of postoperative nausea, vomiting and headache.

**Key words:** Spinal, General, Hernia, Inguinal.

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### INTRODUCTION

Worldwide, inguinal hernia repair is one of the most common surgeries, being performed in more than 20 million people annually. The lifetime occurrence of groin hernia - viscera or adipose tissue protrusions through the inguinal or femoral canal - is 27–43% in men and 3–6% in women. Inguinal hernias are almost always symptomatic, and the only cure is surgery. A minority of patients is asymptomatic; however, even a watch-and-wait approach in this group results in surgery in approximately 70% within 5 years.<sup>1-3</sup>

A magnetic resonance imaging (MRI) with Valsalva manoeuvre should be performed if the clinical suspicion is high despite negative USG findings. MRI is superior to a computed tomography scan (CT-scan)

and USG in diagnosing hernias. In some patients, herniography can be used, which is superior to USG and CT-scan. Watchful waiting is the appropriate and safe option for men whose daily life activities are not affected and have a reducible hernia. But hernia repair must be considered when patients present with pain because there is an increased chance of incarceration or strangulation, especially for femoral hernias due to the rigid borders of the femoral canal.<sup>4-6</sup> Hence; the present study was conducted for evaluating and comparing the efficacy of spinal anesthesia and general anesthesia in inguinal hernia repair.

## MATERIALS & METHODS

The present study was conducted for evaluating and comparing the efficacy of spinal anesthesia and general anesthesia in inguinal hernia repair. A total of 50 patients scheduled to undergo inguinal hernia repair were enrolled. Complete demographic and clinical details of all the patients was obtained. All the patients were broadly divided into two study groups as follows:

**Group A:** Patients undergoing inguinal hernia repair under spinal anaesthesia, and

**Group B:** Patients undergoing inguinal hernia repair under general anaesthesia

Postoperative pain was assessed by VAS (Visual analogue scale) on a scale of 0 to 10 with 0 indicating no pain and 10 indicating maximum unbearable pain. All the results were recorded in Microsoft excel sheet

and were subjected to statistical analysis using SPSS software. Chi-square test and student t test was used for evaluation of level of significance.

## RESULTS

Mean age of the patients of group 1 and group 2 was 39.5 years and 42.8 years respectively. Mean pain score at discharge among patients of group 1 and group 2 was 1.3 and 2.8 respectively. Non-significant results were obtained while comparing the mean VAS at discharge among patients of the two study groups. Incidence of postoperative nausea and vomiting was significantly higher among patients of group 2 in comparison of patients of group 1. Incidence of postoperative headache was significantly higher among patients of group 2 in comparison of patients of group 1.

**Table 1: Comparison of pain score at discharge**

Variable	Group 1	Group 2
Mean VAS score	1.3	2.8
SD	1.2	1.5
p- value	0.0854	

**Table 2: Incidence of postoperative nausea and vomiting**

Postoperative nausea and vomiting	Group 1	Group 2
Number	3	8
Percentage	12	32
p- value	0.001 (Significant)	

**Table 3: Incidence of postoperative headache**

Postoperative headache	Group 1	Group 2
Number	1	5
Percentage	4	20
p- value	0.000 (Significant)	

## DISCUSSION

Abdominal wall hernias are common, with a prevalence of 1.7% for all ages and 4% for those aged over 45 years. Inguinal hernias account for 75% of abdominal wall hernias, with a lifetime risk of 27% in men and 3% in women. Repair of inguinal hernia is one of the most common operations in general surgery, with rates ranging from 10 per 100 000 of the population in the United Kingdom to 28 per 100 000 in the United States.<sup>7,8</sup>

Traditionally almost all inguinal hernias are referred for surgical treatment following diagnosis. Progression of a hernia by time is natural and most surgeons prefer repairing all inguinal hernias as soon as possible. Inguinal hernia is a benign disease and it repair results in only rare and minor complications in elective setting. Nevertheless, complications developed after emergency repairs may be more dramatic and frequent, even mortality may be recorded. It is especially so if patient is elder. Therefore, a repair in elective setting is recommended generally.<sup>9,10</sup> Hence; the present study was conducted for evaluating and comparing the efficacy of spinal

anesthesia and general anesthesia in inguinal hernia repair.

Mean age of the patients of group 1 and group 2 was 39.5 years and 42.8 years respectively. Mean pain score at discharge among patients of group 1 and group 2 was 1.3 and 2.8 respectively. Non-significant results were obtained while comparing the mean VAS at discharge among patients of the two study groups. In a similar study conducted by Li L et al, authors assessed the efficacy of spinal anesthesia (SA) vs. general anesthesia (GA) in inguinal hernia repair in adults. A total of 2593 patients were analyzed. Compared to GA, SA was associated with a longer surgery time, particularly in laparoscopic repair. Postoperative pain at 4 h and 12 h were in favor of SA following either open or laparoscopic repairs; and considering borderline significance, patients receiving SA might be more satisfied with the anesthesia they used for herniorrhaphy. Some major complications of scrotal edema, seroma, wound infection, recurrence, shoulder pain were comparable between the two groups. However, patients receiving SA had an increased risk of postoperative urinary retention and headache when compared with GA.<sup>11</sup>

Incidence of postoperative nausea and vomiting was significantly higher among patients of group 2 in comparison of patients of group 1. Incidence of postoperative headache was significantly higher among patients of group 2 in comparison of patients of group 1. Urbach KF et al, in another previous study compared the efficacy of Spinal and General Anesthesia for Inguinal Hernia Repair. In 514 patients scheduled for inguinal hernia repair, either spinal or general anesthesia was chosen at random. Postoperatively, the incidence of urinary retention and catheterization, gastrointestinal disturbances, nonspecific and postspinal headaches, back complaints, and respiratory complications was recorded. The complications occurring in 236 patients after spinal anesthesia were compared with the occurrence of identical complications in 278 patients who received general anesthesia. Vomiting but not nausea was significantly greater in the general anesthesia group. All other complications, except postspinal headaches, occurred with approximately the same frequency in both groups. Unexpectedly, spinal anesthesia was followed by a relatively high incidence of nausea. Two patients developed atelectasis, both after spinal anesthesia.<sup>12</sup> Burney RE et al compared spinal and General Anesthesia via Laryngeal Mask Airway in Inguinal Hernia Repair. Fifteen patients were randomized to subarachnoid block, and 18 patients were randomized to laryngeal mask airway. No patients withdrew from the study because of adverse effects. All study subjects were followed up for 6 months. Total time from entry into the operating room to discharge home was slightly longer in the subarachnoid block group but this difference was not statistically or clinically significant. Patient satisfaction was high with both techniques; patient-reported outcomes were the same. Surgeons rated muscle relaxation and exposure better with the subarachnoid block.<sup>13</sup>

## CONCLUSION

Spinal anaesthesia could be an appropriate option for pain relief in inguinal repair, but it can't be confirmed that spinal anaesthesia is better than general anaesthesia as spinal anaesthesia is accompanied by higher incidence of postoperative nausea, vomiting and headache.

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