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"EXPLORING THE RELATIONSHIP BETWEEN PERSISTENT BACK PAIN AND SPINAL ANESTHESIA IN POST-CESAREAN PATIENTS"

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Abstract

Background: There is a common misconception linking spinal anesthesia to the development of back pain.

Aim: This study aims to investigate the relationship between spinal anesthesia and back pain, assessing its incidence and association with various factors.

Method: A statistical analysis was conducted involving 64 patients who received spinal anesthesia. Data were collected preoperatively, on the third postoperative day, and six months post-anesthesia.

Results: Among the 64 patients, nine patients had a prior history of persistent back pain. On the third postoperative day, 8 patients reported back pain; of these, 18 experienced resolution of pain by six months. However, 2 patients continued to report back pain after six months, with 9 of them having a history of persistent back pain prior to the procedure.

Conclusion: Persistent back pain is not solely dependent on spinal anesthesia, and the occurrence of new-onset persistent back pain attributable to spinal anesthesia is rare.

Keywords: Persistent back pain (PBP), Transient back pain (TBP), Spinal anesthesia (SPA), Anesthetic techniques.

INTRODUCTION

Approximately 70-80% of people experience persistent or chronic back pain at some point in their lives[1]. It is estimated that nine out of ten adults will encounter back pain at least once, and among working adults, five out of ten report experiencing pain each year[2]. Notably, the response rate among females is significantly higher than that among males[3]. Psychological

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factors, such as anxiety, somatization, and depression, play a crucial role in the progression of chronic low back pain.[4,5,6]

These psychological factors not only influence chronic pain but also impact acute pain, particularly acute spinal pain, which is becoming increasingly common. Chronic back pain is not a single entity; rather, it is a multifactorial issue that includes psychological elements as aggravating factors[19,20]. Chronic back pain can be categorized into three groups: simple musculoskeletal pain (95%), spinal nerve root pain (4-5%), and serious spinal pathology (1%)[7].

Given that back pain is an emerging problem, it is essential to evaluate its association with spinal anesthesia.

METHOD AND MATERIALS

The present randomized controlled study was conducted at Sree Mookambika Institute of Medical Sciences, Kulasekharam from March 2024 to August 2024. A total of 64 patients undergoing surgery under spinal anesthesia were included in the study. A detailed medical history was collected from each patient, with particular emphasis on their back pain history. Patients were instructed to provide information on their condition on the third postoperative day and again six months after surgery.

All patients were premedicated with ranitidine and metoclopramide one hour before surgery, and received midazolam (2mg) 15-20 minutes prior to the procedure. In the operating theater, standard monitoring tools, including ECG, pulse pressure, and oxygen saturation, were utilized. Spinal anesthesia was administered using hyperbaric bupivacaine at L3/4 and L4/L5 intervertebral spaces. Various needle sizes (23G, 25G) were employed.

Data collection considered the following parameters: age, weight, needle size, vertebral space, and bupivacaine dose. To assess persistent back pain, questionnaires were administered before surgery, on the third postoperative day, and six months post-surgery. A direct personal approach was used throughout the study.

OBSERVATIONS AND RESULTS

A total of 64 patients received spinal anesthesia. Nine patients had a previous history of back pain prior to undergoing spinal anesthesia. On the third postoperative day, data analysis revealed that 56 patients reported no pain, while 8 patients complained of back pain. These patients were discharged from the hospital with routine analgesics and spasmolytic medication

After analyzing the data six months post-spinal anesthesia, 2 patients reported back pain. The remaining 18 patients experienced relief from their back pain through routine analgesics and adequate rest. A statistical analysis revealed that out of the 8 patients with back pain, 9 had a

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prior history of persistent back pain. Thus, only one patient out of the 64 had a new onset of persistent back pain following spinal anesthesia.

Our study found no significant relationship between the administration of spinal anesthesia at the L3/4, or L4/5 levels and the occurrence of backache. Additionally, we could not establish any correlation with the sizes of spinal needles used (23G, 25G). Ultimately, there was no noteworthy difference observed in patients who experienced back pain prior to surgery compared to those assessed six months after receiving spinal anesthesia.

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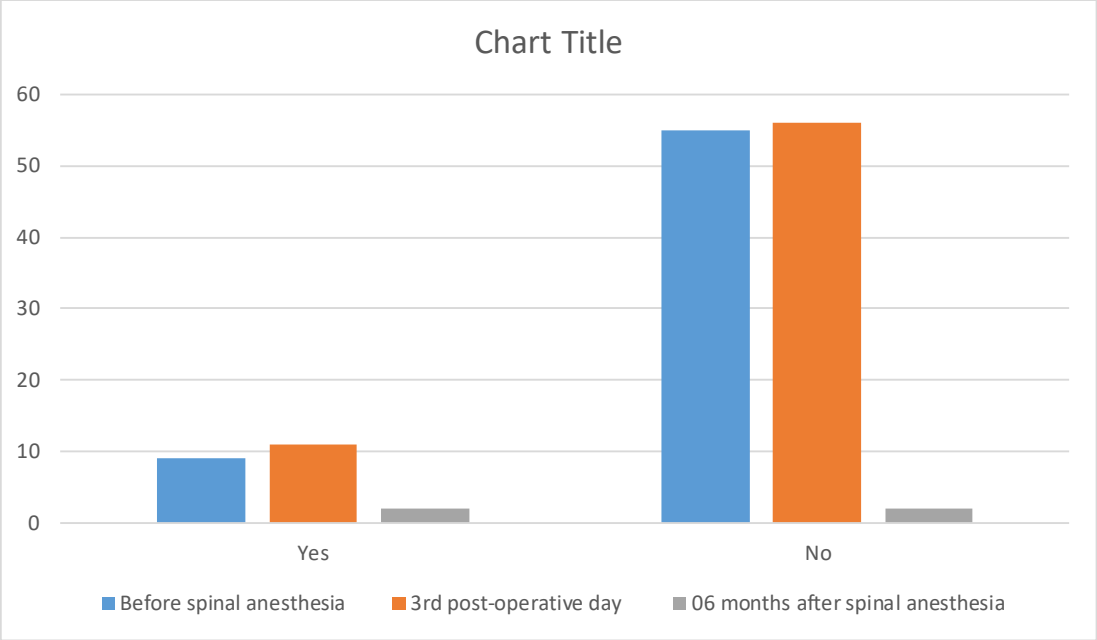
BACK PAIN	Before spinal anesthesia		3rd post-operative day		06 months after spinal anesthesia	
	Yes	No	Yes	No	Yes	No
Number	9	55	11	56	2	62
	14.06%	85.93%	17.18%	87.50%	3.13%	96.87%



AGE (YEARS)	FEMALE
0-15	NIL
15-30	52
30-40	11
40-50	1

WEIGHT (IN KG)	
0-15	NIL
16-30	NIL
31-45	NIL
46-60	30

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DISCUSSION

After statistical and analytical categorization of the data, we conclude that transient back pain and persistent back pain are distinct entities. Transient back pain is defined as pain that occurs on the third postoperative day but resolves within six months, while persistent back pain refers to pain that lasts for months.

On the third postoperative day, 12.5% (8 out of 64) of patients reported back pain. Of these, 75% (6 out of 8) experienced only transient back pain, which was alleviated with analgesics and proper rest. 3.125 % (2 out of 64) of patients experienced persistent back pain six months after spinal anesthesia. Among these, 81.8% (9 out of 11) had a previous history of back pain. Additionally, only 3.125% (2 out of 64) of the cases reported new-onset back pain.

When comparing our results with those of other studies, it is evident that most discussions focus on chronic back pain without establishing its relationship with spinal anesthesia. Many reports indicate that the largest contributing factor to chronic back pain is simple musculoskeletal pain, accounting for approximately 95%. In our research, we did not investigate factors associated with chronic back pain; instead, we focused on spinal anesthesia as a key indicator.

The majority of studies primarily comment on transient back pain and neurological symptoms, with limited data available on persistent back pain. One particular study analyzed data before spinal anesthesia (SPA) and at one and five days post-SPA, reporting overall incidences of 18.9%, 10.7%, and 12.3%, respectively. In contrast, our findings showed 9.01% before SPA, 20.49% on the third day, and 9.83% six months post-SPA. The slight differences in percentages may largely be attributed to variability in the follow-up duration; however, the incidence of new cases (0.8%) aligns closely with the findings of that study.

A key distinction in our study is the six-month follow-up period, during which we defined persistent back pain (PBP) as pain lasting longer than six months. From the 3.125 % (2 out of 64) of patients who developed new-onset back pain, we can speculate that, even without undergoing SPA, they might have still experienced PBP. The progression to persistent pain likely depends on various factors, which fall outside the scope of our research.

In conclusion, our data suggests that spinal anesthesia has minimal to no role in the onset of new persistent back pain. Additionally, both transient and persistent back pain do not appear to be influenced by factors such as the duration of surgery, type of surgery, needle size, or intervertebral space.

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CONCLUSION

Persistent back pain is not influenced by spinal anesthesia, and new-onset cases of persistent back pain attributable to spinal anesthesia are rare findings.

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