

Relationship between Persistent Back Pain and Spinal Anesthesia

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ABSTRACT

Background: The misconception among people relating spinal anesthesia to back pain.

Aim: To establish relationship between back pain and spinal anesthesia, study its incidence and association with various factors.

Method: Statistical study was conducted by collecting data of 122 patients having spinal anesthesia. Data was collected preoperatively, on 3rd post-operative day and 06 months after spinal anesthesia.

Results: Out of 122 patients, 55 were male and 67 were female. 11 patients had previous history of persistent back pain. On 3rd post-operative day, 25 patients had complaint of back pain, pain resolved in 13 of them by 6 months. However, 12 patients had back pain after 06 months of spinal anesthesia. Out of 12, 11 patients were same who had history of previous persistent back pain

Conclusion: Persistent back pain, exclusively, does not depend on spinal anesthesia and new onset case of persistent back pain due to spinal anesthesia is a rare one.

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

INTRODUCTION

Approximately 70-80% of people meet with persistent and chronic back pain in any era of their whole life¹. It is estimated that among adults, nine out of ten individuals experience back pain at least once in their life and among working adults, five out of ten experience pain every year². The response rate among the females is far greater as compared with men³. Psychological factors have a predominant role in the progression of chronic low back pain i.e., (anxiety, somatization, depression)^{4,17,18}. Psychological factors have an influential impact not only on chronic pain but also on acute pain, especially acute spinal pain getting common day by day. Chronic back pain is not a single entity disease but a multifactorial problem^{19,20} including the psychological factors as an aggravation⁵. Chronic back pain can be triaged into three categories: simple musculoskeletal pain (95%), spinal nerve root pain (4-5%) and serious spinal pathology (1%)⁶. As back pain is an emerging problem, it is important to evaluate its association with Spinal anesthesia⁷.

METHOD AND MATERIAL

We designed a research for collecting data of patients undergoing surgery after SPA. For that purpose, by assuring the quality assurance

programme of our hospital, we collected the data of patients for elective surgery in all categories by using a structural questionnaire. Data was collected from April 2016- March 2017. The patients who were selected, had been marked and their data was saved in high professional operational system. All patients were informed about the conducting research during their routine OPD visits before the surgery. We collected detailed history of all patients, especially about backache. They were informed to provide us information on 3rd post-operative day and six months after their surgery as per format of our questionnaire.

All patients were premeditated with ranitidine and metoclopramide one hour before surgery and were given midazolam 7.5mg 15-20 min before surgery. In the operation theatre, standard monitoring tools including ECG, Pulse Pressure and O₂ saturation were used. Patients were given spinal anesthesia using hyperbaric Bupivacaine^{21,22} in either of L2/3, L3/4, or L4/5. All types of needle were used i.e. 22G, 23G, 25G and 27G. Dose of anesthetic agent was used according to circumstantial factors i.e. weight of patient, duration of surgery, type of surgery. The patients were placed in different positions during surgery i.e. supine, left lateral and decubitus position. Data was collected considering following parameters i.e. age, weight, needle size, vertebral Space, duration of surgery and bupivacaine dose. To assess the persistent back pain questionnaire was filled before surgery, on 3rd post-operative day and six months after surgery. Direct personal approach was used during conduction of the study.

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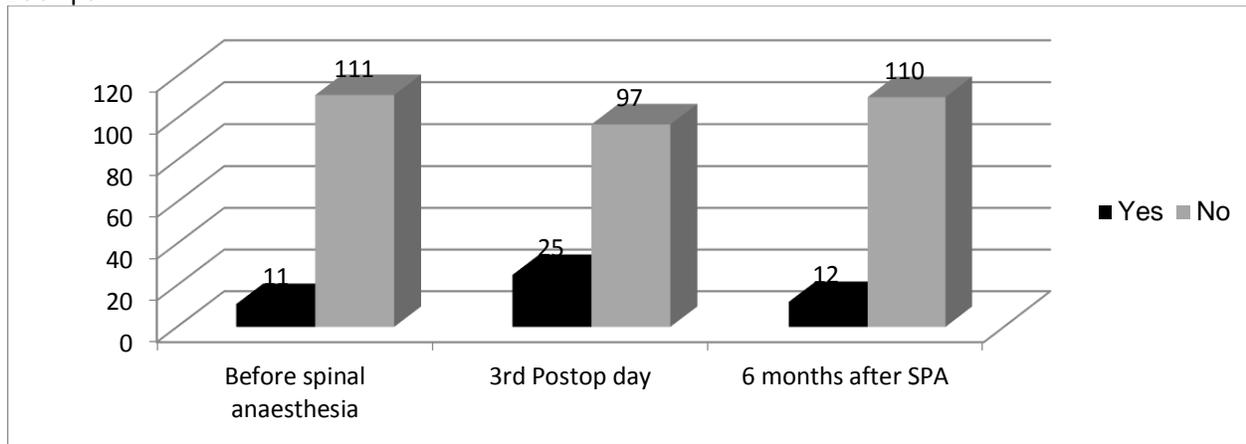
RESULTS

A total of 122 patients were selected and were given spinal anesthesia. Out of 122, 55 patients were male and 67 patients were female. 11 patients had previous history of backache i.e., pain before performing spinal anesthesia. While analyzing data

on 3rd post-operative day, out of 122 patients, 97 patients had no pain and 25 patients had complaint of back pain. We discharged them from hospital by keeping them on routine analgesic and spasmolytic medication.

| Back pain | Before spinal anesthesia | | 3 rd post-operative day | | 06 months after spinal anesthesia | |
|-----------|--------------------------|--------|------------------------------------|--------|-----------------------------------|--------|
| | Yes | No | Yes | No | Yes | No |
| Amount | 11 | 111 | 25 | 97 | 12 | 110 |
| % | 9.01% | 90.98% | 20.49% | 79.51% | 9.83% | 90.16% |

Back pain



After analyzing the data after six months of spinal anesthesia, 12 patients had complaint of back pain. Rest of 110 patients had relieved their back pain by using routine analgesics and proper rest. When data was compared using statistical and analytical approach, out of 12 patients, 11 were those who had already history of persistent back pain, so out of 122 patients only one patient had new onset of persistent back pain.

There was no relationship noted between spinal anesthesia given in L2/3, L3/4 or L4/5 with backache. Likewise, we could not establish any relation with sizes of spinal needle (22G, 23G, 25G and 27G). Hence, no remarkable difference was noted between the patients having back pain before surgery and six months after spinal anesthesia.

| Age(years) | Male | Female |
|------------|------|--------|
| 0-15 | NIL | NIL |
| 16-30 | 04 | 07 |
| 31-45 | 16 | 20 |
| 46-60 | 24 | 27 |
| 60+ | 11 | 13 |

| Association | With SPA | No relation |
|-----------------------|----------|-------------|
| New onset pain | | |
| Amount | 1/22 | 121/122 |
| Percentage | 0.8% | 99.18% |

| Weight (kg) | Male | Female |
|-------------|------|--------|
| 0-15 | NIL | NIL |
| 16-30 | NIL | NIL |
| 31-45 | 02 | 01 |
| 46-60 | 03 | 04 |
| 61-75 | 29 | 23 |
| 76-90 | 21 | 37 |
| 90-105 | NIL | 02 |
| 105+ | NIL | NIL |

DISCUSSION

After statistical and analytical categorization of data, the end conclusion is as follows:

The transient back pain and persistent back pain are two different entities. The pain which was present on 3rd post-operative day but subsided after six months is labelled as transient back pain while the one which persisted for months is labelled as persistent back pain. On 3rd post-operative day, 20.49%(25/122) patients had back pain, out of which 52% (13/25) have only transient back pain which relieved on using analgesics and proper rest. 9.83%

(12/122) patients of total one have persistent back pain after six months of spinal anesthesia, out of which 91.6% (11/12) had previous history. Only 0.8% (1/122) cases have new onset of back pain.

Comparing the following results with other studies, majority have had a discussion on chronic back pain without its relation with spinal anesthesia^{11,12} and reporting the largest contributing factor in causing chronic back pain as simple musculoskeletal pain i.e. 95%⁶. In our research, we have not studied factors linked with chronic back pain^{13,14}, instead, we have taken spinal anesthesia as a key indicator. In vast majority of studies, data comments only on transient back pain^{15,16} and neurological symptoms^{8,9,10}, however less data is available on persistent back pain. In one study, data was analyzed before SPA, within 5 days and one month after SPA having the overall incidence as 18.9%, 10.7% and 12.3% respectively⁷ comparing with our results as 9.01%, 20.49% and 9.83% before SPA, on 3rd day and 6 months after SPA respectively. The slight difference in percentages is mainly due to the time duration variability, however, the percentage of new cases (0.8%) are almost same as that of ours⁷. Our study is different in an aspect that we have followed the cases for 6 months and labelled PBP to one which is > 6 months.

From 0.8% (1/122) cases, we can predict that if these patients does not undergo SPA, they still might have developed PBP. The reason for such progression depends on multiple factors which is beyond the scope of our research. Concluding all data, we can definitely finalize that spinal anesthesia has almost no role in new onset persistent back pain. Transient back pain and persistent back pain, definitely, does not depends on duration of surgery, type of surgery, needle size and intervertebral space.

CONCLUSION

Persistent back pain, exclusively, does not depends on spinal anesthesia and new onset case of persistent back pain due to spinal anesthesia is a rare finding.

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