Fears and Perceptions Associated with Regional Anesthesia: A Study from a Tertiary Care Hospital in South India

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Abstract

Aims: To assess the patients’ fears and their perception about regional anesthesia and to study the correlation between fears and perception and demographic profile. Design: A prospective cross-sectional survey on 150 patients scheduled for surgery under regional anesthesia (RA). Materials and Methods: The structured questionnaires composed of patients’ demographic data and questions regarding patients’ fears about RA. Questionnaires along with consent forms were sequentially distributed to patients. American Society of Anesthesiologists physical status Classes I and II patients aged between 18 and 80 years scheduled for surgery under RA at the preanesthesia clinics were included in the study. Statistical Analysis: Statistical analysis was done by calculating percentages using Chi-square test. Results: One hundred and fifty participants were studied, and their responses were analyzed. Overall, 75.3% (n = 113) patients had preoperative fear. Fear of pain during surgery, i.e., 49.3% (n = 56) and fear of needles 48.7% (n = 55) were the most common fears that were observed in the study population. Patients had less fear regarding nausea, vomiting, and headache. Patients’ demographic details did not have a significant correlation with their fears except for gender, with women being more afraid (86.3% vs. 67.7% of men, P = 0.01). Six patients (4%) revealed dissatisfaction and 10 patients were neutral with RA. Ten patients (6.7%) opted for GA in the future and one patient opted for RA with sedation. Conclusion: There is a significant prevalence of fear for RA and its procedures which can affect the patients’ decision and postoperative anxiety. The study replicated the high prevalence of anxiety and fear and has clinical implication of improving the education and specifically targeting the fears and anxiety to help the patients’ better cope during and after the surgical procedure.

Keywords: Fear, perceptions, regional anesthesia

Introduction

Fears about surgery and anesthesia are well known to cause preoperative anxiety. This can lead to autonomic nervous system hyperactivity observed in the form of hypertension, arrhythmia, and palpitations.[1] It is also observed that these patients have increased postoperative complications (nausea, vomiting, and pain)[2,3] with delay in recovery than patients who had less preoperative anxiety.[4]

Anesthesia relieves the patients’ intolerable pain during the surgical procedures. Regional anesthesia (RA) provides excellent analgesia facilitating early rehabilitation and discharge. The benefits from recent advances in techniques and equipment for continuous peripheral nerve blocks have reduced risks, hence making RA more attractive to both patients and surgeons.[5,6] Still many patients continue to regard the technique with some apprehension. Fear of needle pain at the puncture site, being awake during surgery, paralysis and backache are some of the most common fears observed about RA.[7,8]

In our hospital, preanesthetic assessment is done at the time of request from the surgical team and a day prior. The anesthesia consultant would spend approximately 30–60 min for each patient explaining about the procedures, complications, and other outcome-related aspects of the procedure. There are instances where some patients might cancel their operations because of the fears that they have of undergoing anesthesia.[9]
It has been well documented that a good anesthetist–patient relationship is important to reduce the fear and anxiety of patient. Patient satisfaction has emerged as an important measurement of health outcomes and a significant indicator of quality of anesthesia. Previous studies have published on the public’s attitude toward RA, concerns of patients regarding general anesthesia (GA), and factors in patient dissatisfaction of spinal anesthesia after the surgery under spinal anesthesia.

This study was conducted to assess the patients’ fear and perception about RA in the preoperative period and to investigate whether age, gender, education level, and history of operation affect the outcome of the survey.

**Materials and Methods**

This was a cross-sectional survey on patients scheduled for surgery under RA. The study was performed at the preanesthesia clinics in our hospitals. Preanesthetic assessment was done at the time of request from the surgical team and a day prior. All the patients were explained about the procedures, complications, and other outcome-related aspects of the procedure. Patients fulfilling American Society of Anesthesiologists (ASA) Physical Status Classes I and II criteria and aged between 18 and 80 years scheduled for minor types of surgeries, both upper and lower extremities scheduled under RA were included in the study. Patients who refused to fill the questionnaire, under the age of 18 years, patients with communication problems, with a history of a psychiatric disorder, ASA III and IV, and pregnant patients were excluded from the study due to issues of confounding factors.

Our study was modeled after the previously mentioned study by Matthey et al., which used a reliable and well-structured questionnaire on publics fear and perception on RA. This questionnaire was translated to the regional language and validated through a pilot study on twenty patients in the preoperative anesthesia clinic. Based on the pilot study findings, it was observed that around 10% of the patients had fear of being paralyzed. Considering expected proportion of 10%, considering ±5 margin of error and desired confidence level of 95%, sample size was calculated to be 138. Considering drop out cases, we decided to interview 150 patients.

The structured questionnaire Alberta survey questionnaire (Matthey et al.) was composed of these sections: (1) questions about the demographic and clinical data of the patient: Age in years, gender, educational level (uneducated, high school, and graduate), and previous experience of RA (yes or no). (2) Questions regarding patients’ fears about RA and were asked to state whether they were “very concerned,” “somewhat concerned,” or “not all concerned” about these fears [Appendix 1].

Institutional ethical committee clearance was obtained. Patients were recruited for the study after the written informed consent and confidentiality were ensured. Observations were done by providing the questionnaires to the recruited patients on the previous day of surgery. The patients were given ample time to fill up the questionnaire independently on the day before the patient underwent the surgery and then were collected by coinvestigators. Any concerns by the patient were clarified by the investigators in patients’ language.

Six hours postoperatively, patient was assessed for satisfaction of RA and future preference of RA. Any reasons for not preferring RA in the future were noted.

**Statistical analysis**

Demographic data such as age groups, gender, education level, and previous RA experience were reported in terms of frequency distribution. All categorical and interval variables were compared for statistical significance across the study cohorts using Chi-square test and independent t-test, respectively. Frequency analysis was used to analyze all the fears of RA, and results were reported in terms of frequency and percentages, respectively. Data were analyzed with the Statistical Package for the Social Sciences SPSS version 17.0 (IBM Corp., USA 2010). All statistical tests were declared significant at α level of 0.05 or less.

**Results**

One hundred and fifty participants were studied and their responses were analyzed. The demographic details are given in Table 1. Out of 150 patients, 99 (66%) were male. The mean age was 43 ± 15.7. The majority of the patients had a high school education level, i.e., 76 (50.7%). Most patients were exposed to the anesthesia for the first time, i.e., 100 (66.7%). Lower extremity surgeries accounted for 92% and upper extremity for 8% of all surgeries.

| Table 1: Demographic data |
|---------------------------|
| Demographics data         | Relevant statistics (n) | Range/ percentage |
| Gender                    |                          |                   |
| Male                      | 99                       | 66                |
| Female                    | 51                       | 34                |
| Age (years)               |                          |                   |
| 18-40                     | 101                      | 67.3              |
| 41-60                     | 42                       | 28.0              |
| 61-80                     | 7                        | 4.7               |
| Education                 |                          |                   |
| Uneducated                | 32                       | 21.3              |
| High school               | 76                       | 50.7              |
| Graduate                  | 42                       | 28.0              |
| Previous patient’s experience of RA |                  |                   |
| Yes                       | 100                      | 33.3              |
| No                        | 50                       | 66.7              |
| Surgery                   |                          |                   |
| Lower limb                | 138                      | 92.0              |
| Upper limb                | 12                       | 8.0               |

RA=Regional anaesthesia
By calculation of overall fear, the number of patients who were afraid was 113 (75.3%). Results of patients’ fear and their severity in relation to RA are summarized in Table 2. The most common fears were the fear of pain during surgery (49.3%) and fear of needles (48.7%). Patients had fewer fears regarding nausea vomiting and headache. The results showed no correlation between patients’ demographics and fears except for gender, with women being more afraid (86.3% vs. 67.7% of men, P = 0.01). In our study, fear of pain, seeing surgery, headache, needle prick, nudeness, and back injury were all statistically significant in women compared to men.

Six patients (4%) revealed dissatisfaction and ten patients were neutral with RA. Of these patients, ten patients (6.7%) opted for GA in the future, 139 patients (92.7%) would opt for RA in the future, and one patient opted for RA with sedation [Table 3].

**Discussion**

In our study, almost two-third of patients posted for RA reported fear. Once the patient is informed about the need for surgery, the patient develops fear of both surgery and anesthesia. In the previous studies, researches showed that the majority of the patients have fear of anesthesia (62%) rather than the surgery (15%).[13]

Pain during surgery (49.3%) accounted for the most common fear in our study. Failed or inadequate anesthesia does occur with the RA techniques, but it is very uncommon. Although this is routinely explained by the anesthesiologists to the patients, patients are also reassured that the surgery will not commence until the block is adequate and in the event of such a thing then GA will be given. Other studies also demonstrated the fears of feeling pain during the surgery as being very prominent.[11,14]

Other observed fears in our patients were needle pricks, which includes IV cannulation, needle at back and at the regional site as observed in other studies.[11] This may due to pain at the pricking site or as a psychological phenomenon of intrusion into the personal space.

Postdural puncture headache (PDPH) was the least concerned among our patients interviewed. Postdural puncture has been reported to occur in 2%–35% of patients after spinal anesthesia[15,16] and was thought to be a major concern. However, 78.7% of our patients told they are not at all concerned. This might be because of the low awareness or regarding headache as a minor symptom. Although paralysis is extremely rare, it was one of the major concerns (27.3%) in a public survey.[11] Permanent neurological complications after RA techniques have been reported to be as low as 0.1%–0.003% in many retrospective and prospective studies.[17] Permanent paralysis was noted to be in 7.3% of the patients studied which is significantly less compared to other studies. The exact reason for this difference in our population needs to be studied. The authors feel that it might be again because of being unaware of complication of paralysis as it is generally observed that our patients were apprehensive of developing any permanent neurological complications which leads to long-term morbidity.

The previous study by Mavridou et al. reported that[13] the preoperative anxiety of anesthesia was 81%, with women being more stressed than men. This observation is replicated in our study (86.3% women vs. 67.7% of men, P = 0.01). Social and societal expectation and pressure placed on men to behave fearless and not to exhibit weakness may be the reason for this gender difference. In our study, fear of pain, seeing surgery, headache, needle prick, nudeness, and back injury were significantly high in females as compared to males. In another study, Dove et al.[14] also demonstrated that the fears of feeling pain and hearing or seeing the surgery were prominent, particularly among female patients, and as per their study, females showed more preoperative anxiety and concern. Many other studies stated that this reason is mainly based on the misconception and poor knowledge about anesthesia.[18]

We observed no difference in preoperative fear with respect to the age of the patients. In previous studies, there are contradictory evidences about fear of anesthesia with respect to age.[12] Study on fear of GA showed patients over 40 years old experienced more fear of GA but[13] stated that younger patients were more anxious preoperatively. No specific cause can be predicted for this indifference of ages for fear of anesthesia requiring more systematic and long-term study.

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**Table 2: Patients’ fear and their severity**

| Cause of fear                  | Very concerned (%) | Somewhat concerned (%) | Not at all concerned (%) |
|--------------------------------|--------------------|------------------------|-------------------------|
| Paralyse                       | 7.3                | 20                     | 72.7                    |
| Seeing surgery                 | 12.0               | 24.7                   | 63.3                    |
| Nausea/vomiting                | 4.0                | 14.7                   | 81.3                    |
| Loss of control                | 8.1                | 22.6                   | 69.3                    |
| Headache                       | 5.3                | 16                     | 78.7                    |
| Needle in back/regional site   | 13.3               | 32                     | 54.7                    |
| Nudeness                       | 6.0                | 25.3                   | 68.7                    |
| Fear of IV                     | 12.1               | 36.6                   | 51.3                    |
| Back injury                    | 15.8               | 23.5                   | 60.7                    |
| Pain during surgery            | 16.6               | 32.7                   | 50.7                    |

IV=Intravenous
Table 3: Patient’s choice of anesthesia for surgery in future

| Choice of anesthesia in future | Frequency, n (%) |
|-------------------------------|------------------|
| GA                            | 10 (6.7)         |
| RA                            | 139 (92.7)       |
| RA with sedation              | 1 (0.7)          |
| Total                         | 150 (100)        |

GA=General anesthesia, RA=Regional anesthesia

CONCLUSION

The study elucidated the high prevalence of fears and anxieties associated with RA and the gender differences. The reason for high prevalence is due to poor awareness about the procedure in both patients and surgeons. The emphasis is also on anesthesiologists who have a major role in educating the patients by spending more time in preanesthetic clinics and also creating awareness in surgeon colleagues. This enhances the quality of life for the patient postprocedure. The findings of the study need to systematically studied further to better understand the findings and overcoming the limitations of the current study.

Acknowledgments

We would like to thank our statisticians, Dr. Radhika and Dr. Banu M at M S Ramaiah medical college, India, for statistical analysis of this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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APPENDIX: ALBERTA SURVEY QUESTIONNAIRE

List of fears about regional anaesthesia. How concerned are you about?

1. Feeling pain during surgery?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

2. Permanent paralysis?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

3. Seeing the surgery?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

4. Loss of control?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

5. Nausea and vomiting?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned
6. Headache?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

7. The needle in your back/regional site?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

8. Nudeness?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

9. Back injury?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned

10. The IV (intravenous) needle?
   i. Very concerned
   ii. Somewhat concerned
   iii. Not all concerned