

ABSTRACT #24

Peripheral Nerve Blocks, Spinal and General Anesthesia Result in Similar OR Time-Efficiency in Outpatients Undergoing Knee Arthroscopy.

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Introduction

Time-efficient anesthesia care is important in ambulatory surgery. While peripheral nerve blocks (PNBs) have been suggested to be favorable to general anesthesia (GA) or spinal anesthesia (SA) in the ambulatory setting [1], concerns are often voiced that PNBs may be less time efficient. In this study we hypothesized that PNBs, when expertly performed, do not result in a significant operating room (OR) delay.

Methods

The automated computer-based anesthesia records (CompuRecord[®], Philip Electronics, North American Corporation, 2001) of 150 patients who underwent outpatient knee arthroscopy in 2005 were randomly selected for analysis (GA = 42, SA = 50, lumbar plexus block-PNBs = 41). Primary endpoints were: *induction time* (time from patient entry into operating room to completion of anesthesia induction), *time to incision* (time from patient entry into operating room to start of surgery incision) and *OR time* (time from patient entry into operating room to patient exit from operating room). Secondary endpoints were: *total anesthesia time* (start of anesthesia to end of anesthesia), and *total surgery time* (duration of surgical procedure from incision to closure). Descriptive statistics and one-way ANOVA were performed using Statistical Package for the Social Sciences (SPSS for Windows, version 11). All anesthetic techniques were performed in the operating room.

Results

One hundred and thirty three automated patient records met the criteria for analysis (aged 11-84, ASA status I-III). There were no significant differences among the three groups in age, sex, height, weight, and ASA status (Table 1). The time to incision (GA 27 ± 14 ; SA 31 ± 8 ; PNB 35 ± 11 ; $p = 0.005$) varied among the groups (Table 2). However, the OR time (GA 78 ± 38 ; SA 81 ± 35 ; PNB 81 ± 22) and induction time (GA 9 ± 8 ; SA 8 ± 4 ; PNB 9 ± 5) did not vary significantly among the groups.

Discussion

In our series, there were no significant practical differences in the time efficiency among GA, SA, and PNBs. While time to incision was statistically significantly different among the techniques, this however, did not translate into prolonged OR utilization. In conclusion, PNBs do not result in significant OR delay when expertly performed.

References

1. Anesthesiology 2000;93:529-38.

Table 1. Summary of Demographics

| | GA (n=42) | SA (n=50) | PNB (n=41) | P-value |
|------------------------|--------------|--------------|---------------|---------|
| Age (years) | 47 ± 13 | 51 ± 16 | 50 ± 13 | NS |
| Height (cm); mean ± SD | 170 ± 11 | 169 ± 13 | 171 ± 10 | NS |
| Range (cm) | 147-188 | 122-196 | 152-193 | |
| Weight (kg); mean ± SD | 87 ± 24 | 86 ± 20 | 85 ± 30 | NS |
| Range (kg) | 47-147 | 53-135 | 52-200 | |
| Sex (M:F) | 21:21 | 24:26 | 25:16 | NS |
| ASA physical status | | | | |
| I (%) | 14 (33) | 17 (34) | 17 (41) | |
| II-III (%) | 28 (67) | 33 (66) | 24 (59) | |

GA - general anesthesia; SA - spinal anesthesia; PNBs - peripheral nerve blocks; NS – not significant

Table 2. Perioperative time intervals.

| | GA (Mean ± SD) | SA (Mean ± SD) | PNB (Mean ± SD) | P-value |
|-----------------------------|-------------------|-------------------|--------------------|---------|
| Total Anesthesia Time (min) | 90 ± 33 | 91 ± 35 | 96 ± 31 | NS |
| Total Surgery Time (min) | 50 ± 29 | 48 ± 27 | 43 ± 17 | NS |
| OR Time (min) | 78 ± 38 | 81 ± 35 | 81 ± 22 | NS |
| Induction Time (min) | 9 ± 8 | 8 ± 4 | 9 ± 5 | NS |
| Time to incision (min) | 27 ± 14 | 31 ± 8 | 35 ± 11 | 0.005 |

GA - general anesthesia; SA - spinal anesthesia; PNBs - peripheral nerve blocks; NS – not significant; Total anesthesia time = start of anesthesia to end of anesthesia; Total surgery time = duration of surgical procedure from incision to closure; OR time = time from patient entry into operating room to patient exit from operating room; Induction time = time from patient entry into operating room to completion of anesthesia induction; Time to incision = time from patient entry into operating room to start of surgery incision