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Effect of Spinal *versus* General Anesthesia in Study Comparing Three Methods of Using Local Anesthetics to Achieve Post–knee Arthroplasty Pain

To the Editor:

The authors of a recently published study[1] comparing three local anesthetic methods of reducing post–knee arthroplasty pain recommended spinal anesthesia, but 23% of patients apparently still received general anesthesia. Would the authors be kind enough to share the postoperative pain score data for these two patient groups (*i.e.*, spinal *vs.* general anesthesia)?

Competing Interests

The author declares no competing interests.

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Reference

1. Amundson AW, Johnson RL, Abdel MP, Mantilla CB, Panchamia JK, Taunton MJ, Kralovec ME, Hebl JR, Schroeder DR, Pagnano MW, Kopp SL: A three-arm randomized clinical trial comparing continuous femoral plus single-injection sciatic peripheral nerve blocks *versus* periarticular injection with ropivacaine or liposomal bupivacaine for patients undergoing total knee arthroplasty. Anesthesiology 2017; 126:1139–50

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In Reply:

We thank Dr. Riopelle for his question. In the article,[1] table 2 contains the results of unadjusted comparisons across study arms for all pain endpoints. In addition to these unadjusted comparisons, for the study's primary endpoint an analysis was performed to assess differences across study arms after adjusting for sex, American Society of Anesthesiologists status, and type of anesthesia. In all cases, the results of the unadjusted and adjusted comparisons across treatment groups were consistent.

Regarding Dr. Riopelle's request for clarification of postoperative pain score data by anesthesia type, table 1 summarizes postoperative pain scores in each treatment arm for patients who received general *versus* spinal anesthesia.

Table 1. Postoperative Pain According to Study Arm and Type of Anesthetic

Pain Assessment* (Numeric Rating Scale)	Regional	Ropivacaine	Liposomal Bupivacaine
Number of subjects			
General	14	8	14
Spinal	36†	47†	38†
Primary endpoint			
POD 1 (06:00 – 12:00) max pain			
General	3 (1, 4)	3 (2, 5)	5 (3, 5)
Spinal	3 (1, 6)	4 (3, 6)	4 (3, 6)
Secondary endpoints			
POD 0, post-PACU			
Average			
General	0.3 (0.0, 2.4)	2.0 (1.3, 2.7)	3.3 (1.3, 4.1)
Spinal	0.6 (0.0, 2.0)	1.6 (0.7, 2.5)	2.3 (1.0, 2.8)
Maximum			
General	1 (0, 5)	5 (4, 6)	5 (3, 6)
Spinal	2 (0, 4)	4 (2, 6)	5 (4, 6)
POD 1			
Average			
General	2.1 (1.5, 3.3)	2.7 (1.9, 3.5)	4.4 (3.2, 4.8)
Spinal	2.8 (1.2, 4.5)	3.5 (2.6, 4.4)	3.7 (2.9, 4.4)
Maximum			
General	5 (3, 7)	6 (5, 7)	7 (6, 8)
Spinal	6 (3, 8)	6 (5, 7)	6 (5, 8)
POD 2			
Average			
General	2.7 (2.0, 4.0)	2.6 (1.9, 3.9)	3.5 (2.8, 4.2)
Spinal	3.4 (2.0, 4.3)	3.2 (2.5, 4.0)	3.5 (2.6, 4.3)
Maximum			
General	4 (3, 7)	6 (4, 7)	6 (5, 6)
Spinal	6 (4, 7)	6 (4, 7)	5 (4, 7)

*Data are presented as median (25th, 75th). † For POD 2, data are missing for five subjects (one regional group with spinal anesthesia, one ropivacaine group with spinal anesthesia, three liposomal bupivacaine groups with spinal anesthesia).
PACU = postanesthesia care unit; POD = postoperative day.

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Competing Interests

The authors declare no competing interests.

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Reference

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"A Message in the Bottle"

To the Editor:

We read with interest the work by Dres *et al.*[1] We would like to highlight some aspects that deserve particular consideration. First of all, the authors scanned the basal pleural space, estimating the effusion volume according to the British Thoracic Society classification as small, moderate, or large.[2] They also used the equation proposed by Balik *et al.*[3] to estimate the effusion volume at the maximal end-expiratory pleural distance between the parietal and visceral pleura. Specifically, the authors stated that they performed the ultrasound exam in the semirecumbent position, with the patient's torso reclined at about 45°, as free fluids accumulate at the lung bases due to gravity. We would tend to disagree with the authors at this point considering that the patients of Balik *et al.*[3] were investigated supine with a mild torso elevation of 15°; furthermore, the mean prediction error of this equation is quite high (158 ± 160 ml). The patient's position has a high impact on the estimation of pleural effusion volume. Furthermore, a consistent evaluation of the effusion volume is very challenging for many reasons (*e.g.,* tall people have a larger thoracic cavity area, diaphragm position, phrenic nerve palsy, diaphragmatic hernia), which was not considered or commented on by the authors. The authors also failed to report the laterality of the pleural effusions: It is well known that the ultrasound assessment of pleural effusions is overestimated on the left side, because the heart increases the fluid level (like a stone in a water receptacle). To overcome these limitations, other methods of pleural effusion estimation have been proposed using a transthoracic lung ultrasound approach.[3–6] However, as correctly stated in the study limitations acknowledged by the authors, the biggest problem lies in the numbers. The overwhelming majority of patients had a small pleural effusion, which has barely any impact on patient ventilation and hardly affects complex outcomes such as duration of mechanical ventilation, weaning success, and intensive care unit length of stay. The very low number of patients with moderate to large pleural effusions is thus an important limitation to the study. Consequently, a much larger study is needed. The authors calculated the sample size for their study, starting from the random assumption that a proportion of patients with a pleural effusion of 25% would be found in the group of patients with successful weaning. From these assumptions, the calculation of 136 patients for the sample size is correct. However, the authors should have recruited 68 patients per group, and not 51 patients with pleural effusion *versus* 85 patients without. To conclude, we believe the study is up to date and interesting; however, keeping the aforementioned limitations in mind, we are still far from reaching a definite conclusion on the real impact of pleural effusion on weaning.

Competing Interests

The authors declare no competing interests.

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Impact of Weaning from Mechanical Ventilation: The Importance of Pleural Effusions and Their Effect on Pulmonary Vascular Resistance

To the Editor:

The recent multicenter prospective observational study by Dres *et al.*[1] examining the impact of pleural effusions on liberation