Can J Anesth/J Can Anesth (2017) 64:435–437
DOI 10.1007/s12630-016-0788-6

CORRESPONDENCE

Single-injection interscalene bupivacaine and dexamethasone for same-day discharge total shoulder arthroplasty: a case series

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Received: 26 July 2016 / Revised: 15 November 2016 / Accepted: 29 November 2016 / Published online: 5 December 2016

To the Editor,

Continuous interscalene block (CISB) has been the typical analgesic modality reported after ambulatory total shoulder arthroplasty (TSA) because single-injection interscalene block (SISB) is perceived to have an inadequate analgesic duration.[1] Ambulatory infusion pumps, however, require additional resources, and nerve plexus catheters are associated with complications.[2] In October 2011, our health region launched a same-day discharge TSA program at a freestanding, publicly funded surgical centre. For postoperative analgesia, the program employed ultrasound-guided SISB with 8 mg perineural preservative-free dexamethasone sodium phosphate (Dexamethasone Omega Unidose 10 $mg{\cdot}mL^{-1}$, Omega Laboratories Limited, Montreal, QC, Canada)[3] and 0.5% bupivacaine with 1:200,000 epinephrine (0.4 $mL{\cdot}kg^{-1}$ maximum 40 mL). The program selected patients from the practices of orthopedic surgeons with lengthy TSA wait lists who were American Society of Anesthesiologists classification I or II with a body mass index of less than 35 $kg{\cdot}m^{-2}$, age less than 70 yr, on neither chronic opioids nor corticosteroids, and who had a potential caregiver at home for the first postoperative 48 hr. With the approval of the University of Manitoba Health Research Ethics Board (H2011:407) on January 5, 2012, we prospectively studied pain and satisfaction outcomes among consenting patients until November 2013, when the frequency of cases diminished due to shortening wait lists.

The TSA was performed according to the surgeon's preference, under general anesthesia, after SISB. Upon discharge home from the recovery room, patients received an oral opioid prescription, with or without acetaminophen. They were instructed to take oral analgesics at 18:00 hr on the day of surgery, continue them regularly as the block wore off, and taper their use as the pain diminished. Patients with inadequate analgesia were instructed to return to the surgical centre for repeat SISB during daytime hours on postoperative day 1 or attend an inpatient hospital emergency room at all other times. The study staff contacted patients daily by phone for five days to inquire about emergency room visits or the need for a repeat block.

Four of 23 eligible patients could not be recruited due to a lack of study staff. The mean (standard deviation) age, operating theatre time, and recovery room time were 60.4 (70.1) yr, 1.3 (0.4) hr, and 3.0 (0.7) hr, respectively. All 19 participants completed daily phone interviews, but four did not return their study diary despite repeated requests. In these diaries, 14 of 15 diaries recorded the onset of shoulder pain at a median of 28 hr (range 17.0-44.5 hr) following surgery. Visual analogue pain scores at rest and at peak along with daily opioid consumption are shown in Figures A, B, and C respectively. Median visual analogue satisfaction score on day 5 ($n = 15$) was 9.5 cm (range 7.1-9.9 cm). One patient returned for a second SISB on postoperative day 1, and no patients visited an emergency room.

Our results suggest that same-day discharge after TSA using SISB with bupivacaine and perineural

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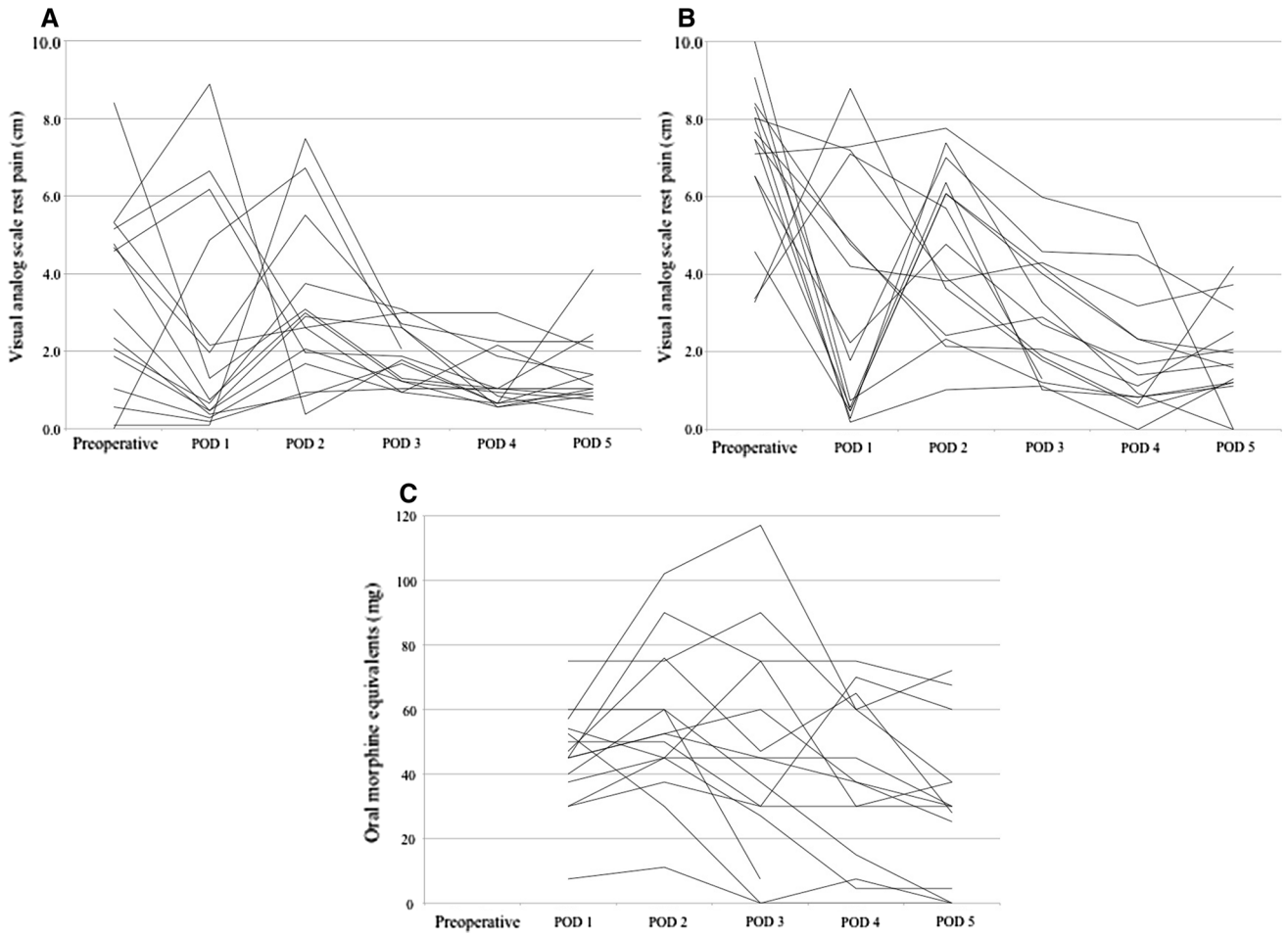

Figure Individual patient trajectories for rest pain (A), peak pain (B), and oral morphine equivalent consumption (C) from the preoperative baseline through postoperative day (POD) 5

dexamethasone is feasible in appropriately selected patients. Previous ambulatory TSA studies have recruited similar participants but have emphasized CISB infusions for at least three days.[1] By postoperative day 3 in the current study, patients were reporting peak pain scores that were consistently below their preoperative baseline, rest pain scores that were typically less than 2 cm, and decreasing opioid analgesic use. Recent studies suggest that dexamethasone doses lower than 8 mg might also be effective, and the intravenous route may provide comparable block duration.[4,5] We believe clinical trials are warranted in TSA patients to compare analgesic effectiveness and adverse effects between established CISB techniques and SISB regimens that include adjuvant dexamethasone.

Acknowledgements This work was supported by the Pan Am Clinic Foundation and the University of Manitoba Department of Anesthesia and Perioperative Medicine Anesthesia Oversight Committee. Neither organization had any role in the design or conduct of the study. This work could not have been completed without the support of the Pan Am Clinic perioperative nursing team. The authors importantly acknowledge their esteemed, late surgical colleague Dr. Warren Froese MD FRCSC, for his contributions to this study and his support of regional anesthesia.

Conflicts of interest The authors have no conflicts to disclose.

Editorial responsibility This submission was handled by Dr. Gregory L. Bryson, Deputy Editor-in-Chief, *Canadian Journal of Anesthesia.*

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