The PNBs Have It

Jeffrey M. Richman, MD

TO PREVENT PAIN AND POSTOPERATIVE nausea and vomiting and improve patient satisfaction, we should choose regional anesthesia over general anesthesia whenever possible. That's the gist of a meta-analysis of 22 studies and 1,362 patients we completed recently. This analysis shows with a greater degree of certainty than ever before that single-shot peripheral nerve blocks (PNBs) do a better job of reducing surgical pain and preventing PONV than general anesthesia.

PNBs vs General Anesthesia

Outcome	PNBs	General Anesth.
Anesthesia induction time (min)*	19.6	8.8
PACU time (min)	45.2	72.0
VAS in PACU (mm)	9.6	35.8
Time from end of surgery to discharge (min)	133.3	159.1
Nausea	6.8%	30.0%
Phase I bypass	81.0%	31.0%
Need for post-op analgesics	6.2%	42.3%
Excellent patient satisfaction	88.0%	72.0%

*Total difference: 8-9 min as weighted by inverse variance
Adapted from: Liu SS, Strodtbeck WM, Richman JM, et al. A Comparison of Regional Versus General Anesthesia for Ambulatory Anesthesia: A Meta-Analysis of Randomized Controlled Trials. Anesth Analg. 2005 Dec;101(6):1634-42.

In the studies we analyzed, the mean visual analog scale (VAS) pain score in the PACU after PNB was just 9.6 mm. That's 26.2 mm less than the mean VAS of 35.8 mm after general anesthesia. The ability of PNBs to prevent nausea was equally dramatic; the incidence of nausea was more than four times higher in patients who received general anesthesia (30 percent vs 6.8 percent). This is likely due to the drastically reduced need for post-op analgesics in PNB patients. Just 6 percent of PNB patients required analgesics in the PACU, whereas 43 percent of general anesthesia patients needed analgesics.

Reduced pain and PONV are the reasons more patients who receive PNBs express satisfaction. A full 88 percent of PNB patients in our analysis rated their satisfaction as "excellent."

The great majority of PNB patients (81 percent) also bypassed phase I recovery, and those who required a PACU stay spent an average of 27 minutes less time there (45.2 vs 72 minutes). Although PNBs did decrease time to discharge, the difference did not reach statistical significance. We think time to discharge will decrease further as facilities update discharge criteria. These criteria are often outmoded, and PNB patients—who are typically minimally or not sedated, arrive in recovery pain-free, and are hemodynamically stable—will likely go home even sooner when we start tailoring discharge criteria to the anesthesia approach.

Our analysis shows that PNBs do have one drawback. PNBs increased induction time by a mean of 8 to 9 minutes. (Central neuraxial blocks, which we analyzed separately, also increased induction time by 9 minutes.) However, this may decrease as anesthesia staffs grow more proficient. In our facility, experienced personnel take only 3 to 5 minutes to administer routine blocks. Granted, time is money, and any increase in induction time is important. But we have found that the dramatic improvement in patient comfort, the high level of patient satisfaction, and the very real potential for significantly faster discharge times are worth the minimal extra time spent up front.

Dr. Richman is Assistant Professor and Director of Regional Anesthesia with the Department of Anesthesiology and Critical Care Medicine at Johns Hopkins University in Baltimore. He is co-author of the recent article: Liu SS, Strodtbeck WM, Richman JM, et al. A Comparison of Regional Versus General Anesthesia for Ambulatory Anesthesia: A Meta-Analysis of Randomized Controlled Trials. *Anesth Analg. 2005 Dec;101(6):1634-42.*