

Update

Physician-Focused News from Boulder Community Hospital



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Techniques for Better Pain Relief, Faster Post-Op Recovery

NEW CPNB AND PCEA METHODS ALSO DECREASE NARCOTIC SIDE EFFECTS

By Owen G. Ellis, MD
Boulder Valley Anesthesiology, PLLC



Postoperative pain relief is a growing field of concern in medicine, and for good reason. After surgery, pain can cause more than just patient discomfort. If not properly managed, a patient's pain response can exacerbate postoperative complications such as myocardial infarction or ischemia, thromboembolic events, metabolic acidosis, impaired wound healing, and other adverse outcomes. So good pain management means better, faster recoveries.

Fortunately, medical research has made great strides in developing modalities for pain management in recent years. The anesthesiology group working at Boulder Community Hospital is at the leading edge of postoperative pain reduction. Many effective new methods, including *continuous peripheral nerve blocks* (CPNB) and *patient controlled epidural analgesia* (PCEA), give patients more control

over pain management and decrease complications associated with narcotics. This increases the overall effectiveness of pain reduction and enhances the healing process, allowing a quicker return to normal ambulation, appetite, body functions, and full range of motion.

Redefining Recovery with Continuous Peripheral Nerve Blocks

In recent years, Boulder anesthesiologists have provided various methods of postoperative pain relief. We were instrumental in promoting the now ubiquitous PCA (patient controlled analgesia) system. Since then, we've added epidurals, spinal opiates including morphine, and peripheral nerve blocks to our postoperative pain control repertoire.

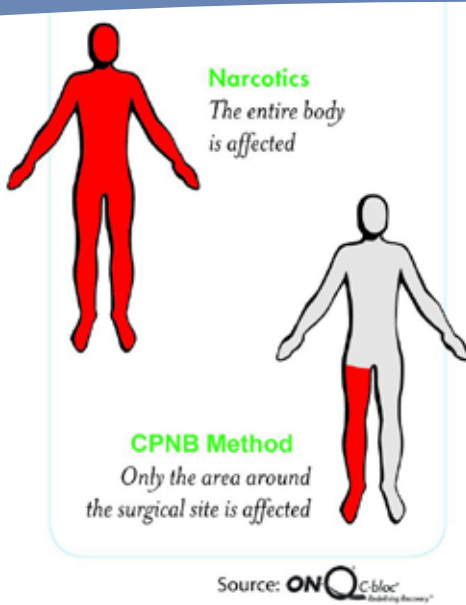
Although these newer modalities have been quite effective, they do have some limitations. Spinal morphine and "single shot" peripheral nerve blocks generally do not last more than 24 hours. Spinal morphine can be used only for abdominal and lower extremity surgery, and only on inpatients. Epidurals can last longer than a day (up to 3-5 days, in fact), but again, only on an inpatient basis, and may be contraindicated on patients who will receive blood thinners postoperatively, such as those recovering from any form of joint replacement surgery.

Therefore, our Boulder group has expanded our use of CPNB techniques using newly developed stimulating catheters and ultrasound imaging to aid accuracy. Originally developed here in the United States, CPNB provides superior postoperative pain relief while minimizing or eliminating the need for opioid analgesics and their side effects.

How CPNB Works

The CPNB method involves inserting a small catheter similar to an epidural catheter. But whereas an epidural is placed next to the spinal cord, the CPNB catheter is inserted next to the key nerve(s) supplying sensation to the surgical site. A pump then infuses the area around the nerve with local anesthesia via the catheter, sometimes for up to four or five days. (Think of going to the dentist and having your jaw numb for four days.) This method can provide site-specific analgesia for pain control both during and after surgery. And since the catheter is not next to the spinal cord, CPNB can be used in patients who get blood thinners.

Because CPNB pain relief systems are so site-specific, we can numb only the area affected by the surgery—just one leg or arm, or even just part of a limb. So instead



of drugging the entire body with opiate pain medicines like morphine, codeine and Demerol, we can direct pain relief only where the patient needs it. Thus patients can avoid common opiate side effects such as constipation, nausea, vomiting, drowsiness or grogginess, breathing difficulties, and the potential for addiction.

Continuous peripheral nerve blocks also provide a much more constant pain relief. The steady infusion of local anesthetic delivers continuous pain relief for up to 10 times longer than a single injection. It also eliminates the occasional “break-through” pain that patients can experience with narcotic pain relievers.

CPNB’s targeted pain relief is particularly effective for orthopedic procedures such as knee replacement and foot, ankle, ACL, hand, arm and rotator cuff surgeries.

Aside from providing the obvious benefit of less pain, CPNB systems are also highly portable and thus can turn surgery which once required 2-3 hospital days for pain control into outpatient procedures. The lightweight infusion pump systems now available can go home with patients; they can be worn under clothing or in a small carrying case. In addition, catheters and

pumps are all disposable, and patients can adjust them, and even take them out.



Infusion pump systems like this one can go home with the patient and deliver localized pain relief for up to five days.

Continuous Peripheral Nerve Block:

SIGNIFICANT PATIENT BENEFITS

- Less pain, more comfortable recovery
- Shorter post-surgery hospital stays
- Faster return to normal body function
- Portability keeps the patient mobile
- Pain relief without narcotic side effects
- Clear-headed recovery
- Constant pain relief—no cycle of pain related to when the patient last ingested opiate pain medicines
- Variable-rate infusion systems offer titration for dose flexibility
- Once placed, system requires little or no clinical intervention

Better Patient Outcomes with Patient-Controlled Epidural Analgesia

At BCH we’ve also introduced PCEA, used for both postoperative pain and for labor pain. As the name suggests, this method lets patients control the administration of pain relief medicine via a catheter into the

epidural space using intermittent boluses or infusion pumps.

PCEA allows the patient to titrate the exact amount he or she wants/needs, and thus manage breakthrough pain in a timely individualized manner. Studies have shown that patients not only get better pain control but also use less medicine with this approach. Our experience also shows that when patients gain a measure of control in their own care, the result is better patient outcomes.

Patient-Controlled Epidural Analgesia:

SIGNIFICANT PATIENT BENEFITS

- Speeds up pain relief
- Reduces/eliminates breakthrough pain episodes
- Patients report lower pain scores
- Patient involvement means better patient outcomes
- Reduces workload of nursing staff

Owen G. Ellis, MD is acting Chief of Anesthesiology at Boulder Community Hospital and acting Chairman of Boulder Valley Anesthesiology. Dr. Ellis is a Diplomate of the American Board of Anesthesiology and a member of the American Society of Anesthesiologists, Colorado Society of Anesthesiologists, International Anesthesia Research Society, and the Society of Obstetric Anesthesia and Perinatology. He can be reached through the BCH Department of Surgery at 303-440-2147.