Regional Anesthesia: Lessons from Iraq

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TWO YEARS AGO, a rocket-propelled grenade struck Army Sgt. Brian Wilhelm's lower left leg, fracturing his tibia and fibula, destroying the tibial nerve, and ravaging his vasculature and soft tissue. Prior to that day, the injury would have been a recipe for weeks of intense, prolonged agonizing pain only partly relieved by morphine and—following amputation—the potential for "phantom" limb pain.

By their nature, modern war injuries challenge us to push the pain-control envelope.

But though this 19-year-old soldier was unlucky on the battlefield, his luck improved in the hospital; the day Brian was injured was also the first day of the Army's new Regional Anesthesia & Pain Management Initiative. Within 15 minutes of arrival, Brian had received lumbar plexus and sciatic blocks. His VAS score dropped from 10 to zero. Shortly after his first procedure, for which he was awake, he was chatting with buddies. Over the next 16 days, which included long flights and four more procedures, the catheters remained and his VAS scores stayed under 2. Today, as an amputee, he experiences no phantom pain or chronic regional pain syndrome.

Although such injuries hopefully will never become commonplace here, Brian's story and others dramatically illustrate the power of regional anesthesia. Here in the military, we're convinced that RA is far superior to traditional morphine-centered treatment for acute pain and for surgical anesthesia.

Since we treated Brian in 2003, we have treated more than 287 limb injuries with RA, including 285 single-injection blocks and 361 continuous catheters. We do this as a part of a multimodal program that includes NSAIDs, narcotic analgesics, benzodiazepines and gabapentin, but the blocks are the key. The mean VAS score of our patients who received indwelling continuous catheters (n=126) dropped from 3.7 (range 0-8) before catheter placement to 2.2 (range 0-6) daily for the first week or until the next operation, whichever came first.

Though our catheters stayed in place for as long as 17 days, we observed only seven superficial catheter site infections, all which cleared after we removed and replaced the catheters. Other complications included two self-limiting arterial punctures, 10 failed blocks, one tachycardia upon test dose (with uneventful second test dose), one sympathectomy, and eight failed placements or needle occlusions. We removed 37 catheters prematurely, usually on patient request; 15 of these patients had adequate analgesia without the blocks. We've seen no anesthetic toxicity, and virtually no opioid-induced over-sedation, nausea/vomiting, or respiratory depression.

By their nature, war injuries challenge us to push the pain-control envelope, and we have learned by doing so. As Sgt. Wilhelm's case suggests, we have found that RA can help prevent the "wind-up pain" that's so devastating to acute-pain patients. Ultimately, we hope to show that pre-empting pain and keeping the stress response and inflammatory mediators in check will reduce long-term morbidity and mortality and improve our patients' overall long-term recovery. ■

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