Regional anesthesia and acute pain medicine (RAAPM) is the subspecialty of anesthesiology that focuses on the local anesthetic blockade of peripheral nerves and the neuraxis for surgical anesthesia, and then continues those techniques into the postoperative management of pain and early rehabilitation. Regional anesthesia itself is an essential component of surgical anesthesia, where its applications range from simple plexus blocks for ambulatory hand surgery, to saphenous nerve block for analgesia after total knee replacement, to the placement of a thoracic epidural as a key component of enhanced recovery after colon surgery. Acute pain medicine not only involves maintaining neural blockade into the immediate postoperative period, but includes expertise in multimodal pharmacology to supplement analgesia, clinical pathways to enhance surgical recovery, and the occasional acute pain management of non-surgical patients, such as those with sickle cell crisis or out-of-control cancer pain. In its entirety, RAAPM is a subspecialty that overlaps pediatric, obstetric and ambulatory anesthesia, as well as chronic pain medicine.

Why Regional Anesthesiology and Acute Pain Medicine?

The regional anesthesia practice of many anesthesiologists is limited to placing lumbar epidurals for labor analgesia. They are missing all the fun! Performing spinal and epidural anesthesia, anesthetizing the brachial plexus with a single injection, or prolonging analgesia by placing a perineural catheter is technically challenging and, yes, fun. These technical interventions disrupt the tedium of managing each and every patient with general anesthesia. However, professionalism dictates that we have better reasons for choosing an anesthetic technique than our own entertainment. Indeed, regional anesthesia has a number of advantages as either an isolated technique or an adjunct to general anesthesia. Compared to fast-track general anesthetic techniques, upper extremity regional techniques promote faster hospital discharge, fewer opioid-related side effects, and better analgesia during the first 24 hours after surgery. A spinal anesthetic for knee arthroscopy allows the patient to watch the surgeon repair his or her knee, while epidural anesthesia allows a mother to be awake during the cesarean delivery of her child. As a component of multimodal analgesia, thoracic epidurals play a critical role in perioperative management by promoting faster return of bowel function and fewer pulmonary complications following major abdominal or chest surgery. The acute pain physician is unique in his or her knowledge of the transition of surgical anesthesia into postoperative analgesia. The RAAPM physician’s expertise in multicomponent pharmacology and techniques to achieve recovery milestones not only provide the patient with a more satisfactory perioperative experience, but contribute to systems-wide efficiencies and cost savings. In short, RAAPM is a valuable, enjoyable and ever-broadening facet of anesthesiology practice.

So Why is Regional Anesthesia and Acute Pain Medicine Not a Part of Everyone’s Practice?

Despite its advantages, the actual practice of RAAPM can be challenging. Historically the most important impediment to its widespread acceptance was the absence of quality training of residents by well-qualified faculty. This situation has rapidly improved over the past decade, coincident with the growth of RAAPM fellowships and their accreditation by the American Council of Graduate Medical Education.1 In 1980, most residents’ exposure to regional anesthesia was limited to obstetrics. Training in the subspecialty varied widely, ranging from hundreds of spinal anesthetics in some programs, to only three spinal anesthetics in other programs.2 By the year 2000, the vast majority of residents exceeded the Anesthesiology Residency Review Committee’s minimal caseload experience for spinal and epidural anesthesia (50 each), and their experience included not only obstetrical indications but also pain medicine and surgical anesthesia uses. Inter-program variation in regional anesthesia training had narrowed. Despite these gains, 40 percent of residents still failed to attain minimal experience in performing peripheral nerve blocks (n=40).3 Preliminary analysis of 2015 resident caseload data suggest that these trends toward expanded experience with regional anesthesia and
pain medicine applications has continue to grow. As would be expected, the more training residents receive in RAAPM, the more likely they are to actually perform blocks in practice. Indeed, a survey of regional anesthesiology and acute pain medicine fellowship graduates found that the subspecialty remains a significant part of their caseload, whether in academic or private practice.4

There are other self-imposed barriers to RAAPM practice. Many anesthesiologists are concerned about what they perceive as increased liability associated with regional anesthesia; the American Society of Anesthesiologists’ Closed Claims database suggests that nerve injury claims have increased as major respiratory claims have decreased over the previous two decades.5 Yet overall, regional anesthesia remains an extraordinarily safe practice that is linked only rarely to major morbidity.6 Another challenge that regional anesthesia enthusiasts often face is bringing their techniques to a practice where performing the blocks is perceived to “slow things down.” However, after experiencing the advantages afforded by regional anesthesia, surgeons typically become strong advocates of these techniques.

Who Practices Regional Anesthesiology and Acute Pain Medicine?

Regional anesthesiologists are in some ways just a bit different from those who deliver only sedative hypnotic drugs and volatile gases. Regional anesthesiologists tend to be good with their hands, they like handling needles, and they enjoy the challenge of finding the epidural space in a 450-pound patient. The rapid growth of ultrasound-guided regional anesthesia favors those practitioners with good eye-hand coordination. Regional anesthesiology and acute pain medicine specialists are committed to the belief that their extra efforts, at the very least, provide their patients with superior analgesia as compared with traditional opioid-based modalities.7 Because regional anesthesia carries the risk of not always working perfectly, it presents a challenge. Thus the job of the regional anesthesiologist is to make the imperfect perfect, and then to research ways to make it even better.

What is the Future of Regional Anesthesia?

In the last decade, the practice of RAAPM has undergone advances not witnessed since the introduction of local anesthetics at the end of the 19th century. Regional anesthesiology and acute pain medicine research is vibrant, particularly in the areas of peripheral nerve blockade, long-acting nerve conduction blocking agents, ultrasoundography, and complication prevention. Outcome studies have further defined the benefits of a comprehensive regional anesthetic and acute pain medicine approach in selected subgroups of patients, both those undergoing relatively minor ambulatory procedures and those having more complicated operations. Improvements in ultrasound technology has revolutionized how we localize nerves destined for blockade. Technical improvements in perineural catheters and peripheral nerve blockade have opened new doors for postoperative analgesia that were previously closed by concerns regarding neuraxial anesthesia during concomitant anticoagulation. Contemporary anesthesiologists believe that RAAPM will become an increasingly important part of their future practice, surgical and postoperative analgesia indications are growing, and residents and fellows are becoming better trained. The future for regional anesthesia and subsequent acute pain medicine applications is bright. No matter what subspecialty of anesthesiology you eventually choose, RAAPM will likely be a much larger part of your daily practice than it was for the generation before you.

References: