

Imaging in Regional Anesthesia and Pain Medicine: We Have Much to Learn

There has been an explosion in use of imaging modalities across all of medicine. The disciplines of anesthesiology and pain medicine are no exception to this trend. The number and quality of research articles incorporating diagnostic imaging in research, diagnostic evaluation, and treatment in new and innovative ways are steadily increasing. In the operating room, the use of transesophageal echocardiography and the anesthesiologist as a bedside diagnostician is now firmly established. Just a glance at the articles appearing in scientific publications in our field over the last 10 years confirms this (Fig 1). Many recent articles have delineated the usefulness of fluoroscopy in performing guided injection techniques. Indeed, the majority of pain practitioners who perform any sort of injection techniques as a part of their practices have quickly learned the advantages of fluoroscopy in guiding precise needle placement.

Despite the widening use of fluoroscopy and other imaging modalities in diagnosis and treatment, the curricula in our Pain Management Training Programs have lagged behind. There remains no formal requirement for education of pain physicians about the use of diagnostic imaging in the evaluation and treatment of the pain patient within accredited pain fellowship programs. While most training programs instruct their trainees in the use of fluoroscopy, this training is not required, and radiation safety is often omitted entirely. Even in disciplines where fluoroscopy has long been a useful tool, this omission is common; orthopedic surgery residency training programs are also still without any formal requirement for training in radiation safety.

In this issue, Fishman et al.¹ have assembled a review of radiation safety aimed at educating the pain practitioner about use of fluoroscopy in the pain clinic. They discuss important and practical concerns, particularly means of minimizing radiation exposure to patients and personnel. Readers without formal training in radiation safety will finally have a concise and educational review. However, readers will quickly realize that the article raises important questions that go unanswered. How does the radiation exposure of the typical pain practitioner who routinely uses fluoroscopy compare with that of other practitioners using fluoroscopy? What have these other specialists learned about the risks of cumulative radiation exposure using modern guidelines for minimizing exposure? Should we, as pain practitioners, even be concerned about radiation exposure when specialists like our invasive cardiology colleagues use magnitudes more radiation in performing invasive cardiology interventions under biplanar cine-angiography?

Recognizing the dramatic increase in the use of imaging modalities and their promise in improving diagnosis and treatment in regional anesthesia and pain medicine, Dr. David Brown, Editor-in-Chief, created a new Imaging Section for the Journal in 1998. A series of articles have now appeared highlighting the usefulness of imaging techniques in our field. I applaud Dr. Fishman and his

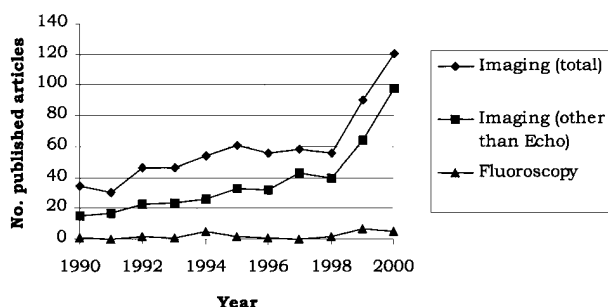


Fig 1. Explosion in the number of anesthesiology and pain-related articles with reference to imaging during the past decade. A MEDLINE search was carried out on the search terms “diagnostic imaging,” “echocardiography,” and “fluoroscopy.” Results were combined for articles appearing in the journals *Anesthesiology*, *Anesthesia and Analgesia*, *Regional Anesthesia and Pain Medicine*, and *Pain*. See text for further discussion.

colleagues for recognizing the need for education regarding radiation safety and for preparing this useful review. I hope to see the current trend continue, with future original and review articles describing use of imaging in research, education, diagnosis, and treatment in regional anesthesia and pain medicine. While there seems to be general agreement that fluoroscopy is an invaluable tool in the pain clinic, there is little in the way of scientific evidence supporting the usefulness of fluoroscopy in improving patient outcomes. If you or your colleagues have used imaging techniques in your daily practice in some new or innovative way, I encourage you to assemble a description and submit it for publication in the Imaging Section. These descriptive articles are a start to educating others in the field; with an understanding of the techniques that are being used in practice, perhaps future researchers will begin to examine outcomes that will lend support to the usefulness of imaging in caring for the pain patient.

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Reference

1. Fishman SM, Smith H, Meleger A, Seibert JA. Radiation safety in pain medicine. *Reg Anesth Pain Med* 2002;27:296-305.