

Knowledge Dissemination in Pain Medicine: Searching for Signal Within the Noise

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Over the past decade, profound growth and innovation in the field of interventional pain medicine has led to a multitude of chronic pain treatment options for patients. While the use of traditional single shot injections is common practice amongst all pain physicians, several minimally invasive therapeutic options are becoming mainstream as a result of meaningful real-world evidence regarding their use and the dissemination of such using conventional and social media platforms. Dorsal root ganglion stimulation,^{1,2} minimally invasive lumbar decompression,³ peripheral nerve stimulation,^{4,5} minimally invasive sacroiliac joint fusion,^{6,7} and interspinous spacers⁸ are a select few of many innovative minimally invasive options with growing evidence-bases for effectiveness and safety. The father of the group, spinal cord stimulation, which has perhaps the most robust evidence for effectiveness and safety, has also gained additional traction with new modes of stimulation, smaller generator sizes, and an expansion of US Food and Drug Administration (FDA) approved indications.⁹

Yet, some patients remain skeptical regarding the safety and efficacy of minimally invasive procedures for pain management. While certainly understandable given that some of these therapies are still in the infant stages of building robust, high-quality evidence, it is undeniable that positive outcomes have been reported in the empirical literature. Skeptics' primary concern, where traditional evidence on effectiveness continues to lag behind, pertains to safety. The need for more confidence in these procedures is fueled by both physicians and patients, who expectedly desire and certainly deserve evidence of procedural safety. Even the most well-conducted randomized controlled trials are limited by sample size, which can often be too small to truly evaluate incidences of rare adverse events or procedural complications. Fortunately, "big-data" evidence is beginning to emerge. For instance, one of the larger retrospective database analyses conducted by Hussain et al¹⁰ of over 70,000 spinal cord stimulator patients evaluated the complication of spinal cord injury. The incidence of this feared complication was observed to be rare, occurring in fewer than 0.5% of study patients. Further, key associated factors were identified that, if optimized, could even further reduce the incidence of spinal cord injury. Reassuring safety data has also been published by several other investigators using robust databases with large samples of patients.¹¹⁻¹⁴ With spinal cord stimulation being a commonly considered minimally invasive pain therapy, the majority of the large-scale safety evidence to date has focused on better understanding its safety, yet clearly there is a need for similar evidence supporting other minimally invasive options as well.

Between physicians and allied healthcare professionals, healthy debate on safety evidence and measures that can be taken to promote safe practice is routine. Unfortunately, however, even with recent safety evidence for spinal cord stimulation, there continues to be misperception amongst some physicians, and as a result, some patients, on the safety of this procedure. While certainly not the norm, the uncommon sentiment regarding safety has been compounded by social media, where falsities can be spread by either non-experts or those with limited experience with spinal cord stimulation.¹⁵ Expectedly, this leads to the spread of misinformation to the general public, and ultimately a profound reluctance in patients for evidence-guided therapies that may ameliorate their suffering.

In this era of social media becoming a potentially valuable source of information for both patients and physicians, it is imperative that guidelines are used that assist with the appraisal of healthcare information posted on all social media platforms.^{16,17} The use of such tools can help promote the dissemination of high-quality information based on evidence-based and peer-reviewed practices. For instance, spinal cord stimulation is only one of many therapies available to patients with chronic pain conditions and the safety of the procedure continues to be established with sound, high-quality evidence.^{10,11,13,14} Certainly, it is our hope that evidence continues to build for other therapies as well. We encourage physicians and researchers to continue to discuss and debate the safety of spinal cord stimulation, amongst other therapies, using the principles of evidence-based medicine. The field of interventional pain continues to evolve, and with that it is our hope that high-quality evidence on both safety and therapeutic effectiveness will provide important insights to patients who seek minimally invasive options to treat their chronic pain conditions.

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