Patient history
Conservative management was what a local orthopedic surgeon had in mind for his patient—a debilitated 66-year-old male suffering chronic low back pain—when he entrusted the retired electrical technician into our care. Specifically, the doctor saw conservative management as the only viable option for the patient after earlier having determined him to be an inappropriate candidate for surgery.

Case description
The patient presented to us with signs of lumbar spondylosis. This was confirmed by both MRI and nerve conduction EMG studies (although the two tests contradicted one another as to whether there was or wasn’t associated nerve impingement—MRI hinted no, EMG suggested yes).

During our workup, we learned that the patient had been taking low-dose opioid medication as prescribed by the referring physician. However, the patient reported gaining scant relief from it. Moreover, unpleasant side effects led to his pressing us to discontinue prescribing it for him.

Treatment plan
The patient was started on a program of conservative management that included different and better pain medications in tandem with therapeutic exercise, adequate rest and control of anxiety. When these measures fell short of providing the hoped-for level of pain relief, we amended the treatment plan to also feature medial branch blockade injections, lumbar medial branch blocks and lumbar radiofrequency low back denervation. Relief was achieved with each of these interventions but, alas, the effects did not last long enough for us to be able to declare success.

Next, we evaluated the patient as a potential candidate for implantation of a spinal cord stimulator. After determining him to be a strong candidate to receive one, we ordered a trial of the device. The patient responded remarkably well to the device during the three-day trial period. Arrangements were made to permanently implant it. The spinal cord stimulator was successfully implanted in June 2008.

Outcome
Pain relief from the spinal cord stimulator was substantial—so much so that we were able to stop both the injections and medications. The patient has largely regained his functional abilities and now conducts his life with virtually no restriction on activities.

Discussion
Spinal cord stimulation is an effective—albeit overlooked—treatment for severe chronic pain. It is FDA-approved and has been around since the 1940s, with over 100,000 patients currently experiencing pain relief because of it. Studies dating back to the 1990s have demonstrated the efficacy of spinal cord stimulation in relieving failed back syndrome and other select chronic pain disorders such as complex regional pain syndrome (Types I and II) and peripheral neuropathy.

Since mental health status affects responsiveness to spinal cord stimulation, we require each implant candidate to first undergo psychological screening to help us determine his or her suitability for receiving the device. Moreover, psychological screening helps us ascertain whether the candidate is competent to operate the patient-controllable spinal cord stimulator.

Preoperative trialing of the spinal cord stimulator involves a minimally invasive procedure in which the device’s electrode lead wires are placed at targeted locations in the epidural space while the patient is under conscious sedation. (Keeping the patient awake allows him or her to supply verbal feedback that helps determine the optimal lead placement positions.) The main components of the device—a radiofrequency receiver, a microprocessor unit and their power source, all encased in a shell approximately the same dimensions as a silver dollar—remain external for the duration of the trial period and are only implanted subcutaneously if spinal cord stimulation passes this effectiveness test.