Hypnotic Analgesia for Combat-Related Spinal Cord Injury Pain: A Case Study

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Abstract
A U.S. Army soldier stationed in Iraq developed myriad pain problems after sustaining a high-level spinal cord injury (SCI) from a gunshot wound. These problems were negatively impacting his ability to participate fully in his physical rehabilitation and care. Ten sessions of self-hypnosis training were administered to the patient over a 5-week period to help him address these problems. Both the patient and his occupational therapist reported a substantial reduction in pain over the course of treatment, which allowed the patient to actively engage in his therapies. Six months post treatment, the patient reported continued use of the hypnosis strategies taught, which effectively reduced his experience of pain. This case study demonstrates the efficacy of hypnotic analgesia treatment for U.S. military veterans who are experiencing pain problems due to traumatic or combat-related SCIs.

Keywords: Spinal cord injury, pain, chronic pain, hypnosis, self-hypnosis training.

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Introduction

Research findings indicate that hypnosis is an effective treatment for both acute and chronic pain conditions (Elkins, Jensen, & Patterson, 2007; Jensen & Patterson, 2006; Patterson & Jensen, 2003). For example, in a sample of 40 patients with fibromyalgia (Haanen et al., 1991), training in self-hypnosis resulted in significantly greater decreases in muscle pain compared to the control condition (physical therapy), and these differences were maintained at 3-month follow-up. Hypnosis also proved to be superior to supportive attention in significantly reducing advanced stage, cancer-related pain in a sample of 39 patients with malignant bone disease (Elkins, Cheung, Marcus, Palamara, & Rajab, 2004). Furthermore, hypnosis outperformed standard care in a group of 36 patients with osteoarthritis, resulting in substantial and significant decreases in pain intensity which were still evident at 3- and 6-month follow-ups (Gay, Philipport, & Luminet, 2002).

The pain associated with spinal cord injury (SCI) is another serious pain condition that could potentially respond to hypnotic intervention. Individuals with SCI can experience both neuropathic pain and musculoskeletal pain (see review by Ehde et al., 2003), and the majority of persons with SCI report multiple pain problems (Turner & Cardenas, 1999). Furthermore, studies have documented that chronic pain in SCI is associated with a number of additional problems such as depressive symptoms (Rintala, Loubser, Castro, Hart, & Fuhrer, 1998), sleep difficulties (Rintala, Loubser, Castro, Hart & Fuhrer, 1998; Widerström-Noga, Felipe-Cuervo, & Yezierski, 2001), lower life-satisfaction (Putzke, Richards, & Dowler, 2000), and interference with daily activities (Widerström-Noga, Felipe-Cuervo & Yezierski, 2001; Turner & Cardenas, 1999). Although persons with SCI report trying a wide variety of treatments for pain, most of these are rated as being only somewhat helpful (Turner, Cardenas, Warms, & McClellan, 2001; Warms, Turner, Marshall, & Cardenas, 2002).

Military veterans with SCI represent a unique subset of the population with this disability. In June 2006, roughly 225,000 to 296,000 persons were living with SCI in the U.S. (Spinal Cord Injury Information Network, 2007) and as of August 2007, about 42,000 of those were military veterans (Department of Veterans Affairs, 2007). Preliminary data from the Veterans Administration (VA) indicates that from October 2002 to September 2007, there was an average of 498 new SCIs among all veterans coming to the VA, with an average of 73 SCIs per year occurring during active duty, and an average of 23 SCIs per year occurring in combat in Afghanistan and Iraq (VA Spinal Cord Injury & Disorders Service, personal communication, December 12, 2007). Although more research is needed to understand the prevalence and impact of chronic pain in veterans with SCI, one study found that as many as 81% of veterans with paraplegia report ongoing pain (Gironda, Clark, Neugaard, & Nelson, 2004). Similarly, the results from a survey of 348 veterans with SCI found that 76% reported at least one chronic pain problem and the majority of these pain problems (83%) occurred daily and lasted most of the day (Rintala, Holmes, Fiess, Courtade, & Loubser, 2005).

SCI-related pain in veterans may also be complicated by psychosocial factors that tend to be more pronounced in this population (in general) such as increased use of tobacco and alcohol (Klevens et al., 1995; e.g., Richards, Goldberg, Anderson, & Rodin, 1990), homelessness (Rosenheck, Frisman, & Chung, 1994), and concomitant mental health disorders (Norquist, Hough, Golding, & Escobar, 1990). Furthermore, some research suggests that pain is more common and more severe among persons whose SCI is due to a gunshot wound compared to other causes (Turner & Cardenas, 1999; Turner, Cardenas, Warms & McClellan, 2001). SCIs resulting from gunshot wounds or explosive devices are much more likely to occur among veterans than nonveterans, particularly among those who have served in
combat. For example, preliminary data suggests that roughly 65% of SCIs occurring in combat in Afghanistan/Iraq are from gunshot wounds or blast injuries (VA Spinal Cord Injury & Disorders Service, personal communication, December 12, 2007).

The current military conflict in the Middle East has provided our veterans’ health care system with several unique challenges. Due to monumental advances in medicine and technology, soldiers are now surviving traumatic injuries that would have likely proved fatal during combat in Vietnam, Korea, or World War II. However, surviving these injuries often means that veterans live with one or more severe health conditions which will require a lifetime of care. SCI and its related pain represent just one of these conditions. As both the number and needs of these patients could potentially overwhelm available resources, it is imperative that effective and economically sound treatments be available, and administered, as soon as reasonably possible.

As mentioned, preliminary evidence from case studies and case series suggests that, just as self-hypnosis training has proven effective for other chronic pain conditions, self-hypnosis training could potentially benefit individuals with SCI-related pain. Therefore, the purpose of this case study was to determine if this training would benefit a veteran suffering from pain associated with a war-related injury to the spine.

Case Study

History and Referral

The patient was a married, 27-year-old male Army Sergeant who had been in Iraq for 14 months (his 12-month tour of duty had been extended). He suffered a gunshot wound to the right side of his neck through the sternocleidomastoid (SCM) muscle while riding in the turret of a Stryker. The bullet exited his neck on the left posterior side and he experienced immediate paralysis of all limbs with no loss of consciousness. He was airlifted to Landstuhl Regional Medical Center in Germany for stabilization. The patient arrived at an Army Medical Center in the U.S. three days after sustaining his injury in Iraq. He was transferred to the VA Hospital SCI unit less than two weeks later.

Upon admission to the VA, the patient showed a variety of sensory and motor deficits. From his chest down, he was completely paralyzed and unable to feel any sensory input. His arms showed a mixed presentation; he had some strength in his upper arms, but greater weakness in his hands and fingers. Although he could move his arms, there was no grasp or finger manipulation. Also, progressive contractures complicated function in his hands. His diagnosis upon initiating hypnosis was an incomplete injury at the level of the 6th cervical vertebrae (C6 ASIA B tetraplegia) from a gunshot wound1.

While at the VA hospital, the patient’s SCI-related pain problems were causing a great deal of difficulty in his ability to receive nursing care and participate in physical and occupational therapies (PT and OT). The patient had arrived with skin breakdown already present (from an inability to turn himself in bed), and he struggled with dressing changes or efforts to relieve pressure from those areas due to the significant pain in his arms. The patient was unable to tolerate range of motion (ROM) or PT exercises involving his arms, which led to further problems with contractures and increasing levels of disability. The patient’s occupational therapist (OT) reported that the patient’s pain intensity during and following therapy was “around a 10” on an 11-point numerical rating scale (NRS; 0 = “No pain” and 10 = “Worst pain imaginable”), and that the patient’s hands were “claw-like” and almost non-functional due to contractures. Both the patient and his OT endorsed that the
patient’s hands—particularly his left—were incredibly sensitive and even a light touch on these areas would cause the patient to experience a great deal of pain. Each time the staff attempted to provide ROM to the patient’s hands, he became irate, verbally abusive, and often demanded that care providers leave the room and turn out the lights.

Trials of several pain medications were attempted, found to be ineffective, and subsequently discontinued or tapered. After the patient experienced numerous adverse responses (e.g., allergies, sedation) to pain medications, participation in a trial of self-hypnosis training was suggested to him by a VA psychologist. The patient was very open to the idea of hypnosis, and after other treatment approaches had failed, the patient began to strongly advocate for receiving hypnosis independently while staff at the VA worked out the organizational issues related to his receiving treatment from a non-VA provider. Once these details were resolved, it was arranged for the patient to receive self-hypnosis training. The treatment protocol was based on a protocol previously reported in a case series (Jensen et al., 2005). However, some modifications in this protocol were made to tailor the intervention more specifically to this patient’s needs.

Using both qualitative and quantitative assessment measures, a research assistant conducted a pre-treatment interview with the patient to gather demographic and pain history information. On the Neuropathic Pain Scale (NPS; Galer & Jensen, 1995), the patient endorsed experiencing pain in the severe range (7-10 on an 11-point NRS) on 6 out of 11 different pain qualities in the past 24 hours. He also rated his pain unpleasantness in the last 24 hours as a 10 on an 11-point NRS (0 = “Not at all unpleasant or bothersome” and 10 = “The most unpleasant or bothersome sensation imaginable”). Prior to beginning treatment, a non-treating clinician administered the Stanford Clinical Hypnotic Scale (SCHS; Morgan & Hilgard, 1978). The patient scored 1 out of 5 possible points on the SCHS, suggesting a relatively low ability on the hypnotic responses assessed by this measure.

Outline of Hypnosis Sessions

The patient and the senior author (BLS) met in the patients’ room at the VA hospital for 10 sessions of self-hypnosis training. The patient was seen up to three times a week over a 5-week period. Sessions 1-2 lasted approximately 75 minutes, while sessions 3-10 lasted roughly 45 minutes (sessions 1-2 include five specific pain reduction suggestions versus two; see below). At the beginning of each session, the patient was asked questions about the location of his primary pain; the average intensity of his pain over the last 24 hours; current pain intensity; and current pain unpleasantness. At the beginning of sessions 2-10, the patient was also asked about any pain relief or other benefits that may have taken place since the last treatment session, and how long these benefits lasted.

After these questions were completed, the patient was given a standard hypnotic induction. Specifically, the patient was invited to imagine being on an elevator and was descending into deeper and deeper relaxation as the therapist counted from 1 to 10, which was followed by a guided “special place” imagery exercise. Following the induction, one of five classic hypnotic experiences was suggested to the patient (heavy hand, hands pulled together, head pulled to side, heavy arm) in order to increase confidence in both the patient and the experimenter for hypnotic responding, and to help induce a deeper trance. Due to the nature of the patient’s injury, the “head pulled to side” suggestion was used.

In treatment sessions 1-2, the patient was given five specific pain reduction suggestions (direct diminution of pain, relaxation, imagined anesthesia, decreased pain unpleasantness, and replacement of pain with other non-painful sensations; Jensen et al., 2005). After each of
these suggestions, the patient was asked to rate his current pain intensity and unpleasantness on an 11-point NRS. His response to each of these suggestions was noted, with a goal of selecting only those suggestions to which he responded best for the focus of subsequent sessions (i.e., sessions 3-10). As part of the self-hypnosis protocol, suggestions for “decreased pain unpleasantness” are used with all participants; in this particular case we also employed suggestions for “imagined anesthesia.” Suggestions to address breakthrough pain were administered during those sessions in which the patient noted he was experiencing this problem, namely sessions 1, 2, 7, 8, and 9. Following the suggestions for breakthrough pain, post-hypnotic suggestions were given which dealt with the patient’s overall healing, his progression in therapies, and increased self-confidence about his eventual discharge from the hospital and return to civilian life. These suggestions were elicited from the patient at the start of session 3. The session ended with post-hypnotic suggestions for continued practice of the self-hypnosis techniques, and that the patient’s feelings of comfort and relaxation would last beyond the end of the session. After the patient was brought out of hypnosis, current pain intensity and pain unpleasantness were again assessed using the 11-point NRS. Audio recordings (CDs) of two sessions were made for the patient and he was encouraged to use these for independent practice of self-hypnosis skills between sessions.

Results

At the beginning of 8 of the 10 treatment sessions, the patient described his primary pain site as his hands, with pain in the left hand typically worse. During sessions 1 and 2, the patient’s current pain intensity dropped from moderate levels (6/10 and 5/10, respectively) to 0s immediately after the induction. The patient continued to show a great deal of improvement in pain intensity and pain unpleasantness throughout subsequent sessions. At the start of session 2, the patient reported feeling “more relaxed” and rated his pain during his previous OT session at a 7 versus a 10. At the beginning of session 3, the patient stated that the pain in his left hand had decreased, so that the pain intensity in both hands was now about equal. Among the many improvements the patient reported, two of the most notable were: (1) between session 6 and 7, the patient’s OT remarked that he could now straighten the patient’s fingers, without any bend in the joints (which was previously not possible due to the patient’s intense pain), and the patient was participating more fully in therapies without interference from pain; his hands had also lost their “claw-like” appearance; and (2) prior to session 10, the patient’s pain medication (methadone) had been reduced from 10 mg two times per day to 5 mg two times per day in the last week.

At the beginning of session 6, the patient reported that while he continued to use the “special place” imagery for pain reduction, he no longer had to use it as frequently because his pain had improved substantially. Furthermore, the patient’s pain intensity and pain unpleasantness ratings at the end of each hypnosis session were never greater than a 2 on the 11-point NRS. Also of note, the SCHS was re-administered to the patient by the treating clinician (BLS) at the end of session 10. Despite his observable positive response to the self-hypnosis training, his score on this measure remained the same as it had been at pre-treatment (1 out of 5 possible points).

Follow-Up

During a 6-month telephone follow-up, the patient reported that he was currently staying in another inpatient rehabilitation facility. He stated that his pain intensity and his sensitivity to pain had decreased considerably; his hands were still the primary site of his
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pain (particularly the palms), with pain in the left palm being somewhat greater compared to the right. At worst, his reported pain intensity level was a 5-6, and at best, it was a 1 ½-2. On the NPS (Galer & Jensen, 1995), the patient only endorsed two sensations which fell in the severe range (7-10), and seven of the eleven sensations were rated 0. Although he was using the practice CD infrequently, he reported independent use of the self-hypnotic skills he had learned during treatment, particularly the “special place” imagery. He also mentioned that his wife was making use of the CD and the hypnotic techniques for stress management.

Discussion

This case study demonstrates that instruction in self-hypnotic analgesia can be a feasible and effective intervention for U.S. military veterans who are experiencing pain problems due to a traumatic or combat-related SCI. The reduction in pain that our patient experienced is noteworthy because it allowed him to participate more fully in his rehabilitation, and it eventually led to a decrease in his pain medications. Full cooperation in PT and OT is crucial for SCI rehabilitation, as it leads to increased function, mobility, and independence. As pain can often interfere with the therapy process, interventions such as hypnotic analgesia can play a key role in helping patients become active participants in their own recovery. Furthermore, taking an active role in pain management is very consistent with the training and discipline involved with military service, and therefore, is often well-received by soldiers. It should also be noted that the success of this intervention marked an important turning point in this patient’s lengthy and difficult rehabilitation. Like many rehabilitation patients with chronic pain, this patient, and the treatment team alike, developed a strong, negative dynamic as a result of the treatment process. This break in the “pain stalemate” provided an opportunity for treatment to refocus on resolving the patient’s barriers to living independently and finding meaning in his life.

Results from this study further suggest that pre-treatment scores on a measure of global hypnotizability (in this case, the SCHS) may not be indicative of how a patient will actually respond during self-hypnosis training. This result is consistent with the weak (and nonsignificant) associations we have found between the SCHS score and response to self-hypnosis training in patients with other chronic pain conditions (Jensen et al., 2005). Our experience in the present case supports the practice of administering more than one measure of hypnotizability, if associations between global hypnotizability and treatment outcome are of interest. Perhaps more importantly, these findings suggest that low scores on such measures should not be used as a justification for withholding treatment.

Finally, with regard to pain medications, many pharmacologic treatments do not work particularly well in alleviating neuropathic pain associated with SCIs (Warms, Turner, Marshall & Cardenas, 2002). Furthermore, many analgesics are costly and have adverse side effects such as sedation, constipation, or mental status changes. These are important factors to consider as the number of veterans with traumatic injuries returning from the Middle East increases. Because self-hypnosis training can be administered by VA or hospital psychologists already on staff (after appropriate instruction or training) with little to no additional cost, and negative side effects are rare, we believe it is an ideal treatment modality to use with soldiers who have SCI-related pain or pain from other combat-related injuries. In addition, individuals report many positive side effects from hypnotic analgesia such as decreased perceived stress and increased feelings of relaxation (Jensen et al., 2006). Because many soldiers often experience high levels of stress upon returning home as they attempt to readjust to civilian life, self-hypnosis training seems particularly relevant. Finally, due to the
persistent nature of chronic pain, psychological factors such as one’s beliefs, expectations, and coping resources may play a larger role in the experience of chronic pain compared to acute pain (Patterson & Jensen, 2003). A psychological treatment such as hypnotic analgesia may therefore be highly effective in reducing the chronic pain associated with a combat-induced SCI.

In summary, this case study highlights the additional research that is required to determine the effectiveness of a self-hypnosis intervention with veterans who are dealing with pain resulting from SCIs or different types of combat-related, traumatic injuries. By conducting this much needed research—and ultimately, providing clinical intervention—we will be able to give something back to those who have sacrificed their own health and well-being in our nation’s service.

Author Note

1Spinal cord injuries are described in terms of the location of the damage to the cord (C6 in this case) and an ASIA classification of the degree of impairment on a scale from A (complete impairment) to E (no impairment). A person with a C6 ASIA B injury has gross impairments of all four limbs, with some minor functional sparing below the level of the injury.

References


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