

Psychological Factors in Chronic Pain: An Introduction to Psychosomatic Pain Management

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Introduction:

Most pain treating physicians have a vague notion, that there may be a psychological component contributing to the severity of chronic pain. The International Association for the Study of Pain defined pain as "an unpleasant sensory and emotional experience associated with the actual or potential tissue damage"(1). The well respected British neurologist and researcher Barry Wyke demonstrated(2), that the neurological signal from a painful stimulus travels from the receptors in the periphery ("nociceptors") to the thalamus, where the message is split: one pathway goes up to the sensory cortex, telling the patient where the pain is and what particular sensation it causes (warm, pulling, pressing etc.). The other pathway goes to the frontal lobe, which is now accepted as being partially part of the limbic system. Stimulation of this area gives the patient the emotional experience that goes along with having pain ("it makes me sick, hopeless ...I feel terrible ...I am afraid ..etc.). Patients, that had their frontal lobes removed, can still tell, where nociceptors are stimulated, but there is no suffering whatsoever that goes along with the experience. It is really the "psychological" component, that has earned chronic pain the attention it is given in modern medicine. Why then are we not focusing our attention on the ways in which we can help patients in this area? Why are most of us still trying to "fix" pain with all the invasive procedural approaches available today? Why not develop a psychological intervention, that treats the emotional part of chronic pain and leave the rest alone?

One of the main reasons I found for this dilemma can be explained quite simply: Medicine is a science, that has clearly come into it's adulthood. Many safe injection procedures and other technical approaches are available today. These are teachable, learnable and reproducible. Psychology however is a young science(3) with many diverting opinions ,each exploring different personality models, being based in often contradictory philosophies. Most pain practitioners have been disappointed with the results, when we send our difficult pain patients to the local psychotherapist (may he be working in a hospital setting or in private practice), even though rare individual practitioners may have consistently good results. It appears, that both the practitioner and the method used play an important role, more so than in other areas of pain management . Psychological approaches are always unique and specific to the individual and do not lend themselves to be studied with a "double blind study".

The literature:

The literature is full of descriptions of "multidisciplinary pain centers" and their management of patients. Outcome studies show, that the idea works better than physical therapy and medication alone, but comparisons against individual successful practitioners have been skillfully avoided. In fact, these pain centers seem to be using up tremendous financial resources with results that are questionable. The psychological literature is full of anecdotal reports of patients improving with psycho-therapeutic approaches alone(4,5,6) but is disappointing in terms of good well organized studies. One study stands out, that will be highlighted here:

In 1992 the San Francisco Spine Institute published a paper in Spine Magazine(7). 100 adults with MRI proven severe lumbar disc herniations were preoperatively interviewed regarding five possible traumatic situations in their respective childhood:

1. Physical abuse
2. Sexual abuse
3. Emotional neglect/ abandonment

4. Loss of one or both parents (divorce, death etc.)
5. drug abuse at home (alcohol, prescription drugs etc.)

The patients were assigned to 3 different groups:

- A. None of these risk factors
- B. One or two risk factors
- C. Three or more

The long term postoperative success was as follows:

- A. 95% excellent improvement
- B. 73% improvement
- C. 15%improvement

What does this mean? The result of surgery and postoperative pain have little to do with the surgical procedure itself but largely depend on factors that date back to the childhood of the patient. It can be easily extrapolated from this study, that the same is true for many or all of the other procedures used in pain management, including osteopathic manipulation, prolotherapy and others. A follow-up study demonstrated, that brief targeted psychotherapy that addresses these specific issues, could improve the postsurgical results dramatically in groups B and C. Pelletier showed, that patients, who had a "severe" childhood, but matured through the process of good psychotherapy, ended up having a higher life-expectancy than people, that had a "happy" childhood.

Another study, conducted by several AAOM affiliated physicians (Klein, Eek, Dorman et al) pointed indirectly in the same direction as the Spine Institute study: Patients were examined regarding the severity of their MRI findings before undergoing prolotherapy treatment. There was no correlation between outcome and the severity of the lesion: patients with severe pathology had the same success rate as the group with no demonstrable pathology, i.e. some patients with no demonstrable pathology did not improve with prolotherapy, others with severe pathology did improve. This study did not look at the probable underlying psychological problems even though I would dare to say, that just as in spinal surgery the outcome of the treatment was determined by the same 5 psychological factors, not by the severity of the lesion.

Neurophysiology:

Much has been written lately on the connection between the limbic system, the place where emotional memory appears to be stored, and the autonomic nervous system(ANS)(8,9). Especially valuable is the literature on Psycho-Neuro-Immunology (PNI). The hippocampus and amygdalaregion show regional constant arousal in patients suffering from post-traumatic stress(10). The stress signal discharges itself over the limbic-hypothalamic axis into the hypothalamus. From here the signal travels 3 ways:

1. Down via releasing factors to the pituitary
2. Down the sympathetic pathways, creating peripheral target specific vasoconstriction and wind-up effect on nociceptors (upregulating pain volume and perpetuating tissue damage)
3. Down to the nucleus ambiguus in the brainstem, from here down one branch of the vagus ("smart vagus") to the enteric nervous system, stimulating the emotion-specific visceral release of several of over 70 informational substances (among those the more well known neurotransmitters such as acetylcholine etc.)(11,12).

Example: the feeling of fear has been related to vagus stimulation of the kidney area and sympathetically induced release of cortisol and norepinephrine.

When a conflict from childhood is uncovered, a new intracerebral neuronal connection is made from the limbic system to the cortex. The patient becomes more "conscious". The conflict induced electrical energy from areas in the limbic system can now flow to the cortex instead of constantly arousing areas in the hypothalamus. This energy becomes a source of greater vitality and clarity. However, the pathway from the conflict to the hypothalamus is habituated and needs to be uncoupled ("deconditioned"). Pawlow, Francine Shapiro(13), Roger Callahan, and this author(4) have reported on the need for uncoupling techniques. Shapiro has well researched the treatment called E.M.D.R (eye movement desensitization and reprocessing)(13). While the patient remembers the past event, her/his eyes are moved forth and back for 33 seconds or longer. This breaks the habituated ANS response.

Successful therapeutic interventions have to fulfill therefore 3 criteria:

1. Target the 5 common childhood conflicts listed above
2. Uncover these conflicts. Often a light trance state is required to accomplish this
3. The process has to be finished with an uncoupling technique

To help the practitioner seek out a treatment, here is a list of more well known modalities that are suitable:

1. Milton Eriksons Hypnotherapy(14) and various offshoots: Neuro-Linguistic Programming (NLP), E.Rossi's Neurobiology(9)
2. Biofeedback psychotherapy and it's offshoots: Psycho-Kinesiology(4), Neuro-Emotional Technique (NET)
3. EMDR(13)
4. Bert Hellinger's and Satyr's "Family Sculpting"(15)
5. Co-Counselling(16)

There are many other techniques that work, but these are the most reproducible, learnable approaches that target the most common 5 factors (i.e.childhood trauma) of chronic pain. The treatment successes published in the literature using one or more of these approaches are quite stunning, yet have so far failed to awaken the appropriate interest in the medical/scientific community at large.

Conclusion:

Because of the intricate neuronal network in the brain, that links the limbic system with the hypothalamus (and virtually any other structure), chronic pain cannot be successfully treated without addressing the psycho-emotional component. The main reason, why some patients get well at all with only interventional technical approaches - but without psychotherapy of some sort- is that most physicians counsel their patients to some degree (often not knowing that they do) and lessen the limbic system arousal by demonstrating confidence and acceptance. However, this type of therapy is not targeted and does not consciously use the tremendous benefits these approaches have to offer.

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