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The Myth of the "Pinched Nerve"

Summary of a pain conference report

by Dr. Marcela Ullmann

According to data published by the renowned Emnid Institute, two thirds of all German citizens complain of recurring pain in their locomotor system, 61 per cent are impaired in their daily activities by it, and every third day of work disability is caused by back pain. Yet 85 per cent of these chronic back patients are not adequately treated.

Have Germans become over-sensitive? According to Dr. Kay Brune, president of the 1998 German Pain Congress in Düsseldorf, the medical care they are receiving is partly at fault. She says, "the surest method against backache is no bed rest, no X-ray and no surgery. In the case of acute backache it is instead important to continue with a normal active life. Operations rarely lead to sustained improvement - on the contrary", because quiet periods contributed to making the pain chronic.

The most effective therapy against backache is therefore early mobilization. Once a person gets into the vicious circle of pain and rest it is usually hard to move out of it without medical help. If you reduce your physical activity too much, the stability of your spinal column will get worse, which leads, together with bad posture, to intensified pain.

But even without harmful behavior, acute trouble may become chronic. Every painful stimulus triggers electric impulses in the peripheral end of thin nerve fibers, which run to a coordinating point in the spinal cord. In response to these impulses, carriers (neurotransmitters) are set free which, as chemical "messengers", give information to the central nervous system.

As nerve cells are able to learn, their way of functioning changes if they are stimulated either for a long time or repeatedly in the same way. According to Walter Zieglgänsberger of the Max Planck Institute for Psychiatry in Munich, the intensity of the pain then increases, since the same stimulus then leads to a higher number of electric discharges in the spinal cord (reported previously in *Süddeutsche Zeitung*, March 26th, 1998).

If the excitability of the nerve cells increases, then the "receptive area" also increases, which is the area which is sensitive to pain. Then, suddenly, not only the shoulder hurts but the whole arm as well. Sometimes these nerve cells produce pain impulses even though there is no real stimulus in the periphery. Similar neural mechanisms have recently been accepted as a basis for the "phantom limb" pain which amputees frequently feel and which has not been understood before.

Not all persons develop a chronic condition as a result of acute pain experiences. These persons are protected by systems within their own body which dampen the increased excitability of the cells in the spinal cord. In the neighborhood of these excitatory fields there are also areas which hinder the activity of nerve discharges as soon as they are stimulated. And how excitable a cell is also depends on hormonal and immunological factors.

"These neurophysiological findings are very important for therapy", thinks Hermann Locher of the International Association for Orthopedic Pain Therapy (IGOST). The idea that pain in the motor

apparatus is chiefly a consequence of "pinched nerves" and could be ultimately freed by removing the bony or muscular obstructions, is now considered as old-fashioned and no longer valid. Neurophysiologists now assume instead that successful joint manipulation - similar to other physical treatments - reduces the pain by stimulating the nerve fibers which lower the excitability of the cell in the central nervous system. Therefore, the common assumption of most physicians that one should not manipulate more than three times repeatedly isn't valid any more.

On the contrary: in order to achieve a persistent reduction of the increased excitability, the pain-causing stimulus must be interrupted until the nerve cells have "forgotten" it. In therapy one should not wait until the pain returns; rather, one must intervene before that. "Therefore, today we start to treat more individually than formerly, especially with respect to the frequency of manipulation", reports orthopedic physician Hermann Locher. For chronic pain patients a "serial" therapy has been established, in which some patients are even treated daily for a while.

In his opinion, acupuncture can be used in the same way. Furthermore, this new neurophysiological model presents an understanding of the molecular and micro-anatomical aspects about how this method could function.

For Zieglgänsberger, acupuncture and electrostimulation are methods which follow the same principles as manual medicine or massage. In his opinion, the new neurophysiological concept also explains the influence of psychological and social factors on pain becoming chronic. Already in the beginning of the 1990's, US scientists published a study which showed that for the prognosis of the progression of back pain symptoms of a given patient, the situation in the workplace is more important than the severity of the acute pain. According to Zieglgänsberger, body and soul are interwoven. Even the spoken word is a significant intervention in the activity of the central nervous system, and a conversation may often be the best medicine.

Translation and summary into English by Karin Paleczek. Adapted and edited by Stephen Paré.