Key Points

1. Chronic pain and disease has in general been linked to high rates of depression
2. In Chiari, it is suspected that there are high rates of depression, but this has not been studied
3. This study looked at a large sample of patients with disabling spinal problems
4. Each patient was evaluated for psychological problems
5. Those with disabling spinal problems had extremely high rates of emotional problems, including major depression. anxiety, substance issues, and personality disorders
6. Interestingly, the location of injury was not related to the prevalence of such problems
7. Results highlight the need to treat underlying psychiatric problems with disabling conditions, which can interfere with recovery and quality of life

Definitions

biopsychosocial - a way of looking at medicine and disease which accounts for the interaction between biological, psychological, and social factors

cervical - the upper part of the spine, the neck area

DSM - the Diagnostic and Statistical Manual for Mental Disorders; widely used publication by the American Psychiatric Association which defines the criteria for diagnosing psychiatric problems

lumbar - the lower part of the spine, the low back area

prevalence - the number, or proportion, of people affected by a specific disease or condition

thoracic - the middle part of the spine, the chest area

cerebellar tonsils - portion of the cerebellum located at the bottom,

Over Half Of Patients With Spinal Problems Suffer With Depression

June 20, 2006 -- More than half of people with a disabling spine problem suffer from major depression. That was just one of the key findings from a large-scale study published in the May issue of the journal Spine. The research was undertaken by a group from Texas and represents one of the largest, most detailed examinations of the subject to date.

While at first glance the fact that more than 50% of spinal disabled patients suffer from depression may be shocking, this result is actually a natural extension of a growing body of research. Previously, both chronic pain and disability have been linked to high rates of depression and anxiety. Similarly, while it has not been studied extensively, many in the medical community suspect that there is a high rate of depression - and possibly other psychological problems - among Chiari/syringomyelia patients.

Within the Chiari community, assuming that there is a high rate of psychological problems, the cause of this is not clear. One possibility is that it may be a direct symptom of the Chiari malformation, meaning as a result of brain tissue compression or disrupting the natural flow of cerebrospinal fluid. Alternatively, it could be related to the chronic pain that many patients suffer. Research has shown that chronic pain can alter the chemical balance in the brain and actually deplete critical neurotransmitters. Finally, the high rate of psychological disorders may be attributable to an inability to adjust to the loss of function and ability that can accompany Chiari and syringomyelia.

Recently, researchers who focus their efforts in this area have begun to use what is called a biopsychosocial model of medicine. The biopsychosocial model emphasizes the unique role that biological, psychological, and social factors play, and stresses the importance of the interaction between them. In other words, an injury or disease is not just a physical problem, and physical symptoms are not just "in someone's head", but rather physical injury can cause psychological problems and vice versa. Advocates of this approach would likely say that all the factors listed above likely contribute to a high rate of depression in the Chiari community.

While this may be true, the Spine study from the Texas research group also demonstrates the strong role that disability (and likely pain) can play in causing psychological problems. Specifically, the research group studied 1,323 patients with disabling spinal problems who had been admitted to a rehabilitation program designed to increase and restore functionality.

To be eligible for the study, patients had to have been partially or totally work disabled for four months, suffered from a work-related spine injury, surgery either didn't work or was not an option, non-operative treatments were ineffective, and severe functional limitations were present. As mentioned previously, over 1,300 patients met the criteria and were enrolled in the study. To see if the location of the injury had any influence on subsequent psychological problems, the researchers divided the patients into three groups, cervical/thoracic injury, lumbar injury, and multiple injuries (see Table 1).

For each patient, a medical history was taken, as well as a physical exam, psychological intake interview, disability assessment interview, and a quantitative functional evaluation. The treatment program they were enrolled in included activities such as supervised exercise programs, vocational rehabilitation, group therapy, and disability education and management.

Specific to this study, the patients were also administered structured clinical interviews according to the Diagnostic and Statistical Manual for Mental Disorders (DSM). These interviews are designed to identify the presence of current (or recent) major psychiatric problems, such as mood, anxiety, substance, and personality disorders.

What they found was a staggeringly high rate of problems among the disabled patients. Specifically, the study patients were 10 times more likely to have a major mood, anxiety, or substance disorder than the general population, and 13 times more likely to suffer from a personality disorder than average (see Table 2).

Problems included high rates of major depression (56%), anxiety disorder (11%), substance use/abuse problems (14%) and a host of personality disorders (70%), such as paranoid, avoidant, and dependent personalities. Interestingly, the location of the injury on the spine (high, low, or multiple) did not appear to play a major role in the presence of psychiatric problems, implying the specific type of injury may not be as important as the injury's disabling effects.

The authors point out that these results highlight the critical need to address underlying psychiatric problems when dealing with a disabling spinal injury. To not do so can severely limit functional recovery and quality of life.

so named because of their shape

cerebellum - part of the brain located at the bottom of the skull, near the opening to the spinal area; important for muscle control, movement, and balance

cerebrospinal fluid (CSF) - clear liquid in the brain and spinal cord, acts as a shock absorber

Chiari malformation I - condition where the cerebellar tonsils are displaced out of the skull area into the spinal area, causing compression of brain tissue and disruption of CSF flow

decompression surgery - general term used for any of several surgical techniques employed to create more space around a Chiari malformation and to relieve compression

Source

Dersh J, Gatchel RJ, Mayer T, Polatin P, Temple OR. Prevalence of psychiatric disorders in patients with chronic disabling occupational spinal disorders. Spine. 2006 May 1;31(10):1156-62.

At this point it is important to ask whether these findings can be generalized to Chiari/syringomyelia patients, or are they just of passing interest. While it is important to be careful in generalizing research results, it should also be noted that many Chiari, and especially syringomyelia, patients, essentially suffer from a disabling, upper spine condition.

In this sense, especially given the fact that the injury location was not important, it seems justified to say that this research offers further indirect evidence that the prevalence of major psychiatric disorders among CM/SM patients is an important area of study. At this point, what is needed is a direct evaluation, using DSM criteria and structured interviews, of Chiari and syringomyelia patients, both before and after surgery. From there, we can begin to understand how serious the problem is for our community and bring effective treatments to bear.

Table 1
Location of Spinal Injury (1,323 Patients)

Location	# of Patients	% w/ Other Injuries
Cervical/ Thoracic	198	52
Lumbar	806	10
Multiple	318	30

Table 2
Prevalence of Selected Psychiatric Disorders Among Spinal Disabled Patients Compared To General Population

Disorder	% of Study Patients With	% of General Population
Any	64.9	15.4
Major Depression	56.2	2.2
Anxiety	10.6	7.3
Any Substance	14.1	7.0
Any Personality	69.6	14.8
Paranoid	30.8	4.4
Avoidant	12.7	2.4
Dependent	7.3	0.5

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