Family Practice Grand Rounds

Chronic Pain

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DR. DAVID B. ADAMS (*Director, Division of Clinical Psychology and Behavioral Medicine*): We are meeting to discuss a patient with chronic pain and shall emphasize management in our discussion. Dr. McBride will present the relevant history.

DR. PATRICK MCBRIDE (*Second-year resident in family practice*): The patient is a 53-year-old white woman who presented with the complaint of low back pain. She has had this complaint for 18 months and has visited this center seven times within that time. She had been seen elsewhere and obtained minimal relief. The patient could not recall a precipitating event to account for the onset of pain, although she did recall lifting a heavy object at work several weeks prior to the onset of pain.

She returned yesterday complaining of intermittent sharp lower left back pain that radiates into the left hip and down the lateral side of the anterior thigh. She said that to her knowledge the weather had no effect on her perception of pain, stating it was excruciating and often unbearable, occurring during 25 to 50 percent of waking time. Sleep, however, does not appear significantly affected.

The patient participates in few hobbies or strenuous activities, complaining of discomfort when doing so. Pain is somewhat relieved by sitting and rest. Hot pads also provide temporary relief. The patient has received disability compensation and is no longer working at home or on the job. She lives with her 26-year-old daughter, who works as a librarian and spends much time at home with her mother.

Other symptoms presented over the 18-month course include tension-related headaches, neck and shoulder pain, and occasional chest pain. An extensive series of diagnostic tests included electromyography (EMG), nerve conduction studies, x-ray examination, computerized axial tomography (CAT) scanning, bone scans, and a myelogram for possible slipped disc, with all findings within normal limits.

The most recent clinical examination revealed minimal tenderness over the left sacroiliac joint and almost no loss of movement of other joints. Sedimentation rate was 10 mm/h Westegren. The patient moved with difficulty on and off the examination table, and her gait was slow but deliberate. Her back was somewhat tender to palpation from the paraspinal muscles to the left of L3-4 vertebral space, with some tenderness in the sciatic notch.

The patient demonstrated good anterior flexion of the lower back but hyperextension aggravated the pain. There appeared to be no atrophy of the quadriceps muscles as evidenced by equal circumference of the legs. She had good strength in all muscle groups except for possible slightly decreased strength of the left flexor hallucis longus. Upper and lower extremity reflexes were equal bilaterally. The sensory examination was within

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normal limits. There appeared to be no tenderness or problems with any other muscle groups.

The patient has also been evaluated psychologically to determine psychogenic aspects of her illness. Data support a psychogenic pain disorder with exaggerated complaints of pain. The occurrence of pain allows avoidance of work and increased support from the patient's daughter; clearly the pain does not appear to be under voluntary control.

The patient has been on a wide variety of medications at different times for pain relief with varying degrees of success. The medications prescribed include Motrin, Zomax, Demerol, Tylox, Darvon, and Vistaril. During her most recent visit the patient requested a refill of Motrin and Tylox, which she states are most helpful in providing pain relief.

It appears from the workup that the psychogenic aspects are predominant in this case. I wonder if there are psychodiagnostic entities that appear more susceptible to experiencing pain.

DR. ADAMS: Pain complaints are most pronounced among individuals with somatoform disorders and are especially associated with hysteria and hypochondriasis, while perceptions of pain are less frequently presented by schizophrenic patients and least evident among brain-damaged patients.

DR. PHILIP J. MICHELS *(Attending Clinical Psychologist)*: It appears that the personality profile based on the test results is consistent with a patient with exaggerated pain. Such an interaction among personality factors supports the subjective nature of the pain experienced and the influence of such factors upon the expression of pain.

DR. ADAMS: This case is also representative of a number of similar cases presented to the family physician. In a primary care setting it has been reported that 65 percent of the patients with physical illness also experience pain.[1]

This is a pervasive problem confronting physicians in primary care. This particular patient has been disabled for 18 months. What is the significance of chronicity on prognosis?

DR. MICHELS: Duration significantly affects adaptation. Research indicates that if an injury produces pain and is treated within six weeks, successful outcomes occur in 80 percent of the cases. At six months, however, guilt, hostility, and depression take their toll. Adaptation or resolution of pain can also be adversely influenced by external compensations received during treatment and recovery. Despite this, 50 percent of the patients return to useful and productive lives.[2]

At one year or longer, a large percentage of pain patients are very resistant to treatment. Pain has been incorporated into the lifestyle. It is therefore obvious that early recognition and treatment are vital factors in a favorable prognosis.

DR. ADAMS: What initial signs aid early diagnosis and treatment?

DR. MCBRIDE: Verbal descriptions at times can suggest a differentiation between psychogenic and organic pain. Words like "burning" and descriptions of "dull," "stabbing," and "aching" tend to support organic pathology. Sensory descriptions such as warm, cold, and pressured have often been found to indicate psychological implications.

DR. MICHELS: Overt behavior of the patient can also be of diagnostic significance. In chronic severe pain, patients are not likely to toss about or cry out.

Summoning the strength for voluntary movement is difficult. In fact, it is not uncommon for chronic pain patients to regress into childlike behaviors best exemplified by the coiled-up fetal-like position. Partly as a result of such regression and also as response to subjective pain, this patient is likely to feel very alone, isolated, and abandoned.

Chronic pain is inevitably perceived as internal to the patient, who views his entire body as being invaded and occupied by the pain, sealing him off from the external world. Often a patient can begin to perceive the pain as punishment for real or imagined indiscretions.

DR. MCBRIDE: While initial verbal descriptions and perceptions of behavior can aid diagnostic concerns, can the mood of the patient also serve a useful diagnostic function?

DR. MICHELS: There is a strong relationship between experienced pain and mood. Anxiety and depression tend to increase perceptions of pain, whereas excitement or aggression elicits the opposite effect. It has been demonstrated that when pain forces soldiers to leave the battlefield, less pain is perceived for wounds equivalent to those encountered by civilians hospitalized for surgery.[3]

A psychological profile of the patient who is convinced of physical origins of his pain is characterized by general somatization, inhibited affect,

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prominent use of denial, and frequent manifest irritability.[4] Further, reports of pain tend to be more common among intrapunitive, extroverted, and older individuals.

Another important consideration relating to pain management from a psychological perspective involves the importance of one's conceptual framework regarding pathology. The application of medical model orientation for the psychogenic pain patient has profound effects. That is, each visit by this psychogenic pain patient to the family practice center supports the patient's well-formulated belief that a discernible organic disease process accounts for her pain.

This common patient attribution allows the patient to become passive and dependent on the physician to "cure" by eliminating the infectious, systemic, or traumatic disorder responsible for the discomfort. Primarily, the patient expects treatment by medication as for other diseases. These beliefs discourage personal responsibility for pain. An important component of the pain response, its subjective nature, is rarely acknowledged by the psychogenic pain patient.

DR. MCBRIDE: In this regard, incorporating a learning or conditioning approach to the psychogenic pain patient would be useful. Such an approach would introduce the subjective component of pain as important and operational at all times. If each person would be described as possessing different thresholds of tolerating pain, then suggesting strategies that the patients can perform on their own to raise their threshold and better tolerate discomfort lays valuable groundwork toward attitude change regarding the perception of pain and subsequent and increased self-responsibility for management of the pain.

DR. ADAMS: The other psychological issue that inevitably results from the expression of pain involves possible secondary gain for the patient. Typical reactions from significant others include special concern, increased attention, solicitousness, and sympathy. Moreover, complaints of pain may also produce successful avoidance of unpleasant events. Avoidance may occur regarding job involvements, household responsibilities, and sexual contacts, thus rewarding the occurrence of pain complaints. We can see such factors operating in this case.

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DR. MCBRIDE: Additional secondary gains include some of the physician's recommendations; most pain-relieving drugs, such as narcotics, hypnotics, or tranquilizing medications, are issued on as-needed basis. This patient has received a varied amount of such medication and bed rest has been part of the treatment as well.

DR. DAVID KEISLER *(Assistant Professor, Department of Family Medicine)*: Monetary compensation through insurance and worker's compensation further complicates pain management. In this case, disability is undoubtedly an entrenched reward to maintain complaints of pain.

DR. ADAMS: Early visits to a physician tend to authenticate the legitimacy of the patient's complaints. Family usually interpret office visits to represent the presence of an organic dysfunction and respond with sympathy, comforting, and increased concern and attention.

As impairment becomes more protracted through chronicity, well behavior becomes more inaccessible because of the physiological effects of nonactivity and the legal and related employment constraints applied to the "sick" or handicapped pain patient.

DR. MCBRIDE: All of these psychological considerations, as Dr. Adams mentioned, appear inevitably interwoven in the expression of pain. What other guidelines exist to help establish the psychogenic aspects of this pain?

DR. MICHELS: When evaluating the likelihood of psychogenesis, it is helpful to have the patient's spouse or someone close to the patient present to respond to these issues. This response provides more valid information, since the psychogenic patient is often manipulative and adept at responding in a biased fashion. The varied reactions of the spouse or friend during the visit can provide important clues.

DR. MCBRIDE: During this patient's several visits, the patient's daughter always accompanied her. The daughter had responded in a consistently supportive and concerned manner, taking on most, if not all, of the household chores.

DR. ADAMS: Careful questioning related to the onset, location, and presence of pain can be helpful, as can an analysis of areas of secondary gain. While it is obvious that the patient with organically derived pain may have incorporated sec-

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Table 1. Differentiation Between Psychogenic and Organic Pain

	Psychogenic	Organic
Physiological	Onset without definable event	Sudden onset or definable event
	Vague description of location	Pain is localized in a well-defined site
Time Pattern	Pain is present less than 25 percent of the time	Pain is constant
	Pain begins immediately but the patient continues to engage in activity for a long time	Greater and more valuable interval between activity and onset of pain
Medication Related	Receiving narcotic, tranquilizing, or hypnotic medications	Either not receiving or resists receiving pain medications
	Addiction or habituation to medications	Neither addiction nor habituation
Other Contingencies	Increased rest and attention perceived as helpful	Patient expresses discontent with increasing demands for rest
	Pain provides time away from unpleasant activites	Pain produces avoidance of both pleasant and unpleasant activities
	Patient acquires support and sympathy from others related to pain	Significant others minimize patient's complaints of pain
	Patient is not working but receiving satisfactory compensation	Financial difficulties apparent since the onset of pain
	Litigation is pending	No litigation is pending
Pain-Related Behaviors	Trouble falling or staying asleep largely unrelated to pain	Trouble falling or staying asleep related to pain
	When patient prematurely awakens, others assist	When patient prematurely awakens, he does not disturb others
	Patient awakens on regular basis approximately the frequency of taking medications (eg, every 3 to 4 hours)	Awakening unrelated to regimen of medications
	Patient out of work or not doing household chores	Work at same or nearly same level as prior to pain
	Participation in hobbies as before	Unable to participate in hobbies
Miscellaneous	Weather has no effect on pain	Pain worsened by damp or cold weather

ondary gain, the more indicators suggestive of psychogenesis, the more probable its diagnosis. Table 1 shows areas of exploration to help differentiate organic from psychogenic pain. If anatomically based receptors for pain remain obscure after physiological assessment, then further psychological assessment can be instituted to aid diagnosis.

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DR. MICHELS: Such tests as the Hendler Screening Test for Chronic Back Pain[5] and the Minnesota Multiphasic Personality Inventory (MMPI) can be useful to rule out somatization disorder or psychogenic pain disorder. It is worth noting, however, that following a chronic duration for such pain, MMPI values are often inflated because of somatization tendencies. Hence, the time lapse between onset of pain and remediation again remains critical.

DR. MCBRIDE: Assuming in this case the prevalence of psychogenic aspects, what is the best way for the family physician to prepare the patient for psychological intervention?

DR. ADAMS: Care must be taken from the onset not to disown the complaint of pain because of psychologic origins. Avoid diagnosis by exclusion. The patient may indeed perceive the interview as an indictment against his honesty and sincerity. As a result the patient may more strongly attempt to authenticate the pain that the clinician minimizes.

DR. MICHELS: The patient can acquire new skills, and through education, he can learn to control better and reduce his level of pain. Discussion of the disadvantages of continuing medication as a sole treatment would include increased tolerance, possible addiction, and other unwanted side effects. Such information helps mobilize the patient toward consideration of additional psychological intervention strategies.

DR. KEISLER: Once the patient is more receptive, further questions should be directed toward the patient who is accepting increased responsibility for pain. Such questions would examine the extent to which the patient consciously wishes to be rid of the pain and the willingness to work toward that goal.

DR. ADAMS: Nonpsychological intervention continues to be strongly sought by the vast majority of pain patients. Individuals may seek surgical intervention, but few pain conditions so treated have long-term success rates, with pain returning after 6 to 18 months.[6]

DR. KEISLER: Analgesics are also highly sought despite the serious limitations, including an inevitable return to the premorbid pain state. Physical therapies that have also been instituted include heat, massage, ultrasound, and isotonic and isometric exercises. Some success has been reported especially when pain is associated with musculoligamentous states. Our patient had used heating pads and heat massage with varying degrees of success.

DR. ADAMS: The relative lack of psychological strategies probably results from the large amount of patient time and effort required. Also, Dr. Michels' comments indicated that the conceptual framework of pain paired with the disease process creates the impression that control is external to the patient.

DR. MICHELS: Hypnosis is a popular strategy for many pain conditions. Because of the high level of suggestibility, hypnosis can be especially helpful with patients whose disorders are primarily diagnosed as conversion (hysterical) disorder. Erickson and Rossi[7] provide an excellent chapter on the use of hypnosis for pain management.

A cognitive technique, attention diversion, has the patient concentrate perception outside the painful bodily area. The stronger the focus away from the pain, the more attenuated the pain. Imagery techniques help the patient alter the focus of attention and may also attempt to "reinterpret" the sensation of pain from an unpleasant shooting type of pain to cold numbing sensations or other sensations more tolerable to the patient. Appropriate internal verbalizations should supplement all cognitive strategies. Statements such as "I can help control my pain," and "I must work hard at this" are representative.

DR. ADAMS: Biofeedback has been used with varying degrees of success. Electromyographic biofeedback is more popular, whereas alpha wave and skin temperatures feedback have received less use. Especially encouraging results have been reported for muscle tension headaches. The length of treatment varies greatly among patients, but such strategies emphasize self-responsibility and minimize secondary considerations.

Relaxation training is also frequently utilized, typically as a supplement to other strategies. The popular progressive relaxation approach of Jacobson[8] involves 20 to 30 minutes of relaxation exercises per sitting, the patient being requested to practice on a twice-daily basis. While relaxation can reduce significantly the anxiety that exacerbates pains, most patients prefer the quick and comparatively passive course of medication.

Secondary gains must be reduced so that the

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expression of pain is not followed by reward, and extinction (ignoring the pain complaint) or punishment becomes a contingency. The greater the frequency of rewarding well behavior rather than sick behavior, the stronger the well behavior becomes.

DR. MICHELS: Despite the obvious advantage of this functional approach, inherent drawbacks explain why families and their physicians rarely implement it. An analysis of environmental contingencies requires time and accurate information. Such analyses may require several visits when a premium is placed on time and immediate relief is sought. When modified reactions from others are proposed, these individuals often refuse to cooperate. It is naive to expect the family to readjust reactions that may represent unconscious drives. Inconsistent contingencies from close relationships can entrench the pain response even more. Despite these cautions, with consistent management such an approach holds much promise for long-term gains in reducing patient expressions of pain.

DR. ADAMS: We are dealing with this important pain issue from several perspectives. Although it is necessary to rule out organic pathology, psychological factors must be considered early. It is becoming increasingly clear that many forms of pathology cannot be easily divided into either organic or psychologic origin; inevitably there is an interweaving of the two disease considerations.

References

1. Baker JW, Merskey H: Pain in general practice. Psychosom Res 10:383, 1967
2. Pace JB: Pain: A Personal Experience. Chicago, Nelson Hall, 1976
3. Beecher HK: Measurement of Subjective Responses: Quantitative Effects of Drugs. New York, Oxford University Press, 1959
4. Pilowsky I, Spence ND: Illness behavior syndromes associated with intractable pain. Pain 2:61, 1976
5. Hendler N, Viernstein M, Long D, Black R: A diagnostic screening test for chronic back pain patients: A selection process prior to surgery and other treatment procedures. Presented at the Second World Congress on Pain at the Annual Meeting of the International Association for the Study of Pain, Montreal, August 16, 1978
6. White JC, Sweet WH: Pain and the Neurosurgeon: A Forty-Year Experience. Springfield, Ill, CC Thomas, 1969
7. Erickson M, Rossi E: Hypnotherapy: An Exploratory Casebook. New York, Irvington, 1979
8. Jacobson E: Progressive Relaxation: A Physiological and Clinical Investigation of Muscular States and Their Significance in Psychology and Medical Practice. Chicago, University of Chicago Press, 1938