Psychosocial aspects of arm pain

Ring, D.C.

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Summary

Introduction
Pain is an unpleasant sensation with both physical and psychosocial components that is associated with actual or perceived tissue damage. Pain is distinct from nociception, a neurophysiological term reserved for the transmission mechanism of physiological pain. Pain is a subjective experience that typically accompanies nociception, but can also arise without any stimulus.

Nonspecific pains are common in most anatomical areas, pain represents one of the greatest challenges in modern medicine, and pain is strongly associated with psychosocial factors. Orthopaedic surgeons are familiar and comfortable with psychosocial influences on illness in the form of secondary gain and malingering, but they are less prepared to manage the physical manifestations of psychological distress, the most extreme forms of which are identified by psychiatrists as somatoform disorders such as hypochondriasis. We would like to believe that the patient in our office with greater complaints has worse physical disease, but there is mounting evidence that psychological distress and poor coping mechanisms may be more important than disease severity. It is the aim of this thesis to focus attention on these issues as they apply to painful arm conditions, to build our scientific knowledge base, and to encourage a focus of treatment on the psychological as well as the physical aspects of illness.

Chapter 2
Pain Dominates Measurements of Elbow Function and Health Status
Pain is the strongest determinant of measures of elbow function and health status. In a study of 104 patients recovering from elbow trauma, pain alone accounted for 66% of the variability in the Mayo Elbow Performance Index scores, 59% of the variability in the Broberg and Morrey scores, 57% of the variability in the American Shoulder and Elbow Surgeons Elbow Evaluation scores, and 36% of the variability in scores on the Disabilities of the Arm Shoulder and Hand questionnaire. Models that included other factors accounted for only slightly more variability (73%, 79%, 79%, and 45% respectively), and those that did not include pain accounted for only 22%, 41%, 41%, and 14% of the variability. Surgeon-based measures that combine objective and subjective measures can be misleading and should be used with caution—they may undervalue or overvalue objective amelioration of disease or impairment. Separating objective and subjective measures will allow comparison of the two and provide us with opportunities to understand the source of any discrepancies.
Chapter 3
The Functional Outcome Of Operative Treatment Of Ununited Fractures Of The Humeral Diaphysis In Older Patients
Successful operative treatment of a discrete, disabling physical problem such as an unstable ununited fracture of the diaphyseal humerus in an older osteoporotic patient can have a substantial impact on health status. The fracture united in 20 of 22 patients in our series and the average score on the Disabilities of the Arm, Shoulder, and Hand Questionnaire decreased from 77 to 24 points. By establishing that discrete, specific arm problems can be addressed with effective operative treatment, we encourage a focus of our professional and academic passions on defining pathophysiology clearly and scientifically, scientifically associating pathophysiology with objective impairment, and using treatments of scientifically established efficacy.

Chapter 4
The Prevalence of Osteoarthrosis of the Trapeziometacarpal Joint
Trapeziometacarpal arthrosis is a normal part of aging with 94% of women and 85% of men over 80 years of age seen for a fracture of the distal radius having radiographic signs of arthrosis. Women develop arthrosis sooner and get worse arthrosis than men. These findings emphasize that pain is an unavoidable aspect of human existence and it will never be possible to avoid pain entirely. It raises the question: What brings a relatively small percentage of the population to the doctor's office for assistance, while the vast majority of patients manage the disease on their own? Orthopaedic surgeons have traditionally argued that it is the patients with the worst disease that present requesting our services, but there is mounting evidence to suggest that the patients that present are just as likely to be those with the lowest resiliency and adaptability. In other words, they may be the most vulnerable. It seems likely that patients that come to the doctor and patients that request surgery for a painful condition are different both psychologically and sociologically from patients that cope with and manage their illness.

Although trapeziometacarpal arthroplasty is an effective treatment for pain, thoughtless use of this surgery may serve to medicalize patients rather than encouraging them to adapt to the inevitable challenges that accompany the aging process. The correct rate of trapeziometacarpal arthritis is debatable; however, surgery in every patient with moderate to severe radiographic changes would severely impact already stretched medical resources, particularly in less wealthy countries. Given how difficult these issues can be in the context of a discrete, easily defined and verified disease, the situation can be expected to be more complex and challenging when the source of the pain, illness, and disability are not readily apparent.
Chapter 5

*Idiopathic Arm Pain*

Nonspecific or idiopathic complaints of pain represented 13% of a busy hand surgery practice. Although these patients had, by definition, no objectively measurable physical dysfunction, they reported substantial disability comparable to patients with several objective disease processes. Such nonspecific pains are common in many anatomical sites and fields of medicine. We prefer the use of neutral, non-threatening terms that acknowledge the limits of modern medicine, such as idiopathic back pain and idiopathic arm pain. Humanity has accepted this concept in the form of “headache” and “backache”, terms that imply that the pain is consistent with excellent health. Why not “arm ache”? 

Chapter 6

*Psychological Factors in Idiopathic Arm Pain*

Patients with non-specific or idiopathic arm pain complaints rated higher on several measures of psychological dysfunction than patients with discrete identifiable causes of pain. Multivariate analysis suggested that poor coping mechanisms in the form of a subtype of catastrophizing known as helplessness were the most important factor. In other words, patients that present with non-specific or idiopathic arm pain complaints have, on average, less adaptive coping skills when compared to patients with discrete sources of pain. The important role of psychological factors such as poor coping skills and distress (anxiety or depression) in illness behavior is familiar to psychologists and psychiatrists who understand that humans are susceptible to somatoform disorders. But in the relatively Cartesian industrialized world, orthopaedic surgeons seem insufficiently aware or sensitive to these issues and may tend, along with their patients, to see all pains as mechanically or physiologically determined and as correctable or curable. Managing and coping with pain are normal aspects of human existence. Good coping skills are important to good health status and should be cultivated.

Chapter 7

*Self-Reported Upper Extremity Health Status Correlates with Depression*

There is a direct, moderate correlation between depression and self-rated upper extremity health status (DASH) for several common discrete sources of arm pain. The slope of this relationship is similar for each diagnosis. Surgeons must be mindful of the fact that a patient that complains more furtively may not have worse or more advanced disease than the average patient with that disease—they may simply be more vulnerable, less adaptive, and more disabled by comparable levels of disease.
SUMMARY

Such a patient may not need more aggressive, invasive, or risky treatments. Such a patient may simply need greater attention and compassion, greater patience and support, and perhaps treatment which addresses the psychological and sociological factors that are preventing them from adapting to and coping with the same illness that most people are able to manage effectively.

Chapter 8
A Survey Of Surgeons, Hand Surgery Patients And The General Public Regarding Psychological Influences On Illness

A survey of surgeons, patients, and the general public suggested a general receptiveness to considering both psychological and physical aspects of illness, although there appears to be a subset of patients that find these ideas offensive. Considering the evidence presented in this thesis, hand surgeons should incorporate consideration of psychosocial issues into their practice. Furthermore, in the absence of scientific evidence to the contrary, general health and wellness would be optimized by choosing the most positive, optimistic, enabling and practical manner of understanding and managing disease and illness. I am optimistic that if medicine as a profession takes this so-called “holistic” or bio-psycho-social-cultural approach, it will become more acceptable to patients and they will benefit.

Chapter 9
Pseudoscientific Explanations of Arm Pain

According to accepted definitions of science, many of the diagnoses that hand surgeons use to diagnose hand and arm pain appear scientific, but do not fulfill the basic criteria that make something scientific. In other words, they are pseudoscientific. Most of the modern “snake oils” in society make a claim to scientific support that is inappropriate. If mainstream physicians and surgeons are to offer more than the “alternative treatments”, we must adhere strictly to scientific principals. Furthermore, pseudoscientific diagnoses may be as concerning as pseudoscientific treatments given the influence that a diagnosis can have on disability, litigation, and self-perception. If we are to follow the medical precept primum non nocere (“first, do no harm”), physicians need to use neutral terms that acknowledge both the limits of modern medicine and our own ignorance, and avoid the use of pseudoscientific diagnoses and treatments. A physician’s job is to identify conditions that should not be neglected and to be certain that we do not overlook opportunities to predictably improve quality of life. We need to avoid encouraging a belief that everything is fixable, treatable, or curable, because that is far from the truth.
**Conclusions**

Pain, and thus psychosocial factors, dominates perceived disability in upper limb surgical patients. Even pain without objective physical dysfunction can be subjectively severe and disabling. Disability correlates with ineffective coping skills and psychological distress for both specific and nonspecific pains. Pain is part of human existence. Orthopaedic surgeons have the skills to provide extraordinary improvements in objective and subjective function for several discrete disabling conditions, but not always through surgery or physical manipulation. Orthopaedic surgeons need to respect the role of psychosocial factors and encourage good coping skills or risk taking advantage of vulnerable patients. Comforting while describing our limitations represents good medicine, and it encourages coping skills and adaptation, will utilize fewer resources, and will avoid potentially harmful medical and surgical interventions. Evidence based treatments—such as cognitive behavior therapy (essentially exercises for the mind in which patients learn to recognize cognitive errors and replace them with more positive and adaptive concepts)—encouraging hope while teaching skills of acceptance, adaptation, and coping may be the most effective treatment for musculoskeletal pain and are essential to help our patients thrive in the face of the many musculoskeletal problems that we cannot yet and may never be able to solve.