

# Conceptual and practical issues in the management of chronic pain

**A physical as well as a mental status assessment is necessary in a patient complaining of chronic pain.**



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Pain is an integral part of the human condition. It is a phenomenon that occupies the attention of a wide range of domains, including philosophy and religion, the arts and medical sciences. From the latter perspective pain forms an ill-defined perplexing terrain: it has been described as a silent epidemic,<sup>1</sup> afflicting approximately 90% of the general population for more than 2 weeks at some point of their lives. The costs are enormous, entailing losses to the economy, a massive burden on health services, and immeasurable human suffering.

## ACUTE AND CHRONIC PAIN

Critical to an understanding of the problem of pain is the distinction between acute and chronic pain: whereas acute pain is a universal phenomenon, chronic pain is not. The latter is responsible for the burdens described, and the challenge is therefore to identify the mechanisms that lead to the perpetuation of pain and the ensuing disabilities. This is an increasingly intense focus of current research.<sup>2</sup> The aim of effective management is to develop effective strategies for secondary prevention.

Some of the important differences between acute and chronic pain are outlined in Table I. A third category, malignant pain, is not addressed in this article. Clearly chronic pain is not acute pain of a longer duration, but a distinct, although ill-defined clinical entity. The subject is further complicated by erroneous or distorted lay and at times medical conceptualisations of pain, and by the confusing

*Table I. Differences between acute and chronic pain*

### ACUTE PAIN

- Short duration/abrupt onset
- Universal
- Understandable in terms of a response to a harmful stimulus
- Single cause
- Biomedical model appropriate
- Accurate diagnosis and prognosis
- More easily treatable

### CHRONIC PAIN

- Persists beyond the time expected for resolution/gradual onset
- Not universal
- Less understandable in terms of a response to a stimulus
- Multifactorial
- Biomedical model inadequate
- Diagnosis and prognosis uncertain
- Less easily treatable

terminologies used to describe chronic pain syndromes. While the focus of this article is intended to be practical management, clearly these conceptual issues have an important bearing on practice. Perhaps more specifically the wide range of terms adopted that reflect different and often conflicting perspectives, contribute to what is generally accepted as a failure to treat chronic pain effectively. Some authors have taken this argument further to suggest that in some respects chronic pain may be considered to be at least in part an iatrogenic disorder.<sup>3</sup> Iatrogenesis may take the form of excessive, unhelpful investigations, misdiagnosis, inappropriate treatment, and misguided, potentially damaging attitudes on the part of the medical profession.

## MODELS, FALLACIES, MYTHOLOGIES

The various ways in which modern medicine may contribute to the persistence or entrenchment of symptoms may be organised into problems of models, fallacies and mythologies. The limitations of a reductive or mechanistic biomedical model applied to chronic pain have already been alluded to in the distinction drawn between acute and chronic pain. A consequence of this way of thinking leads to the pursuit of further increasingly unproductive investigations in the search for a putative underlying cause for medically unexplained symptoms, leading to frustration on the part of both clinician and patient, and reinforcing the process of somatisation. Furthermore increasingly sophisticated but not necessarily specific investigations are likely to reveal anomalies. If these positive findings are considered to represent the underlying cause of pain, and other physical, psychological and social factors are neglected, surgical treatment, for example to relieve lower back pain, is unlikely to be successful.

Mythologies may refer to the expectations patients have of medical science and the degree to which these expectations have been generated and sustained by the medical profession, often in association with the pharmaceutical industry. Patients tend to present to clinicians with the expectation of cure. This expectation is a relatively recent phenomenon and derives most powerfully from an infectious disease model. Yet according to the World Health Organisation (WHO) report of the global burden of disease, projected to 2020, of the five leading causes of disease burden, none can be considered to be amenable to cure.<sup>4</sup>

Fallacies include mind-body dual-

ism, either-or dichotomies, the notion of linear causality, categorical thinking or reification (treating the problem as a concrete entity), and the confusion of correlation with cause. The first two are linked in the tendency to determine whether a symptom is either physical or psychological. This dichotomous categorical approach is potentially harmful in that if a problem is defined as physical, important psychological factors that are amenable to treatment are neglected. Conversely, if a problem is regarded as psychological, important subtle physical components may be overlooked, with potentially hazardous consequences. Furthermore in a scientific materialistic culture the body in relation to the mind is conceptualised as measurable and therefore real and tangible, whereas the mind is relegated to the ephemeral and beyond the province of medicine. An implication of this is that a medically unexplained symptom is regarded, in a way that is most often not made explicit, as being not real, 'psychosomatic', or even more dismissively, 'all in the mind', or 'supratentorial'. Another implication is that the symptom is not serious, or, despite the distress and the disability caused by the pain, not worthy of medical attention. The patient becomes all too aware of this inference, and forms the belief that the clinician does not believe in the problem, or suspects that he or she may be malingering. This leads to an increasingly antagonistic, mistrustful relation between the patient and the clinician, and the medical profession in general, and the likely angry escalation of symptoms and persistence of disability.

It may be argued that chronic pain should not be confined to psychosomatic or unexplained medical symptoms. Nevertheless only a small proportion of those who

experience pain consider this pain symptomatic of a disease process, and only a minority of those who do seek medical advice will have evidence of an organic cause.<sup>5</sup> This article is concerned principally with the great majority of those forms of pain which remain medically unexplained, while arguing that the basic principles of addressing psychological and social factors are relevant to all chronic medical conditions.

The problem of linear causality is related to the limitations of the biomedical model, in that the pain symptom is assumed to have a cause, and that by treating this underlying cause the symptom can be expected to remit. Particularly with regard to chronic pain it is more appropriate to regard causation as circular rather than linear. The duty of the clinician is to interrupt the cycles rather than remove the presumed cause. Pain understandably leads to depression, which in turn lowers the threshold of pain tolerance (Fig. 1). Patients suffer unnecessarily because a significant factor in the cycle, most often depression, is neglected in favour of an undue focus on the physical component of the cycle.

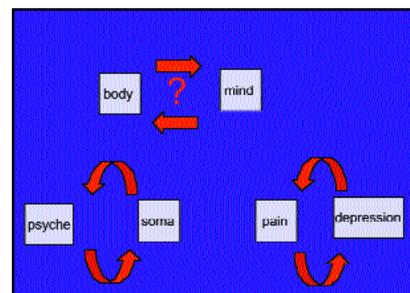


Fig. 1. Dualist versus integrated models.

Closely related to these issues is the identification of correlation with cause. This has been alluded to above but a concrete example is the use of an MRI scan to investigate a low back pain problem with-

out evidence of a neurological deficit. A high proportion of asymptomatic cases will demonstrate changes on scanning, often, for example, a degree of disc prolapse. If these positive findings are considered to be causative rather than incidental, surgery is a likely option, with the bleak probability of the pain persisting or worsening. These angry, increasingly helpless and hopeless patients will be familiar to many clinicians. Further adding to their disability may be yet another iatrogenic factor, the inappropriate prescription of, most commonly, opiates and benzodiazepines, upon which patients tend to insist despite there being scant evidence of a beneficial response.

Associated with the either/or dichotomous way of thinking is the inclination in medicine to conceptualise phenomena categorically, rather than in dimensional terms. Diagnostic categories are interpreted as explanations, and thus become reified. This applies to general medical disorders as it does to psychiatric diagnoses.

The pathophysiology, and the boundaries of such diagnostic categories as fibromyalgia and the myofascial syndrome are not clear, yet are frequently invoked to account for chronic pain. (The term fibromyalgia entered the vocabulary of medicine in the early nineties and within a decade six million Americans were diagnosed with the disorder, six times the number of those living with HIV in the USA).<sup>6</sup> In the psychiatric domain the categories of dysthymia and somatoform disorder are frequently employed, but it would be fallacious to assume that these diagnoses or constructs represent disease processes that sufficiently account for the disability. Yet the practical consequence of this tendency is that the patient given the diagnosis of a 'slipped disc' or a

'pinched nerve', despite there being no objective evidence of these supposed pathologies, is very likely to resist interventions other than the purely physical in the fervent attempts to relieve the pain.

Chronic pain defines the limits of modern medicine. With regard to the anxiety concerning iatrogenesis, it is possible that by medicalising human suffering, that is by extending the scope of medicine beyond its limits, the very problems medicine seeks to solve are perpetuated and the resources required of patients to regain control of their lives are undermined.

## THEORETICAL PERSPECTIVES AND TERMINOLOGY

The literature concerning chronic pain is further confused by a wide range of at times overlapping theoretical perspectives. These might be broadly categorised as follows:

- psychiatric disorder
- psychodynamic perspectives
- perceptual and cognitive abnormalities
- pathophysiological processes
- learned social behaviour.

These perspectives have advantages and disadvantages: they are clearly not mutually exclusive and can perhaps be most usefully employed in a complementary multifactorial approach.

These conceptual difficulties give rise to a confusing and unsatisfactory nosology which can be summarised as follows:

- terms originally implying occult disease: hysteria, hypochondriasis, 'nerves'
- terms implying psychogenesis: psychosomatic, somatisation
- neutral terms, i.e. without causal implications: somatoform disorders, medically unexplained symptoms, functional disorders (although this has tended to

become regarded as synonymous with 'psychological').<sup>7</sup>

The title of this edition itself essentially upholds a dualist approach: the more neutral terms, in not making inferences of either physical or psychological causation, are generally considered to be more constructive.

In order to avoid these pitfalls, and to prevent further distress and disability, a paradigm shift needs consideration: from the elimination of pain to the modulation of pain, and from cure to rehabilitation.

A neuroanatomical model (Fig. 2) provides a schematic basis for appropriate pharmacological interventions. The much simplified diagram is intended to draw attention to a number of key features; in particular the plasticity of the nervous system, and the notion of pain as a subjective multidimensional experience, including from the neurophysiological perspective, an expression of ascending activating impulses modulated by descending inhibitory controls.

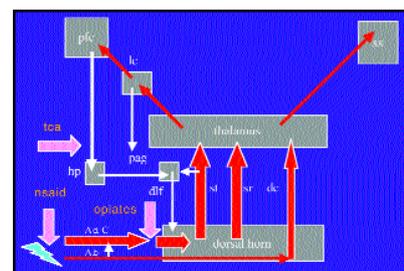


Fig. 2. A simplified diagrammatic model of pain. (St = spinothalamic tract; sr = spinothalamic tract; dc = dorsal column; ss = somatosensory cortex; lc = limbic cortex; pfc = pre frontal cortex; hp = hypothalamus; pag = periaqueductal grey matter; dif = dorsolateral fasciculus; tca = tricyclic antidepressants; nsaid = non-steroidal anti-inflammatory drugs.)

A more neuropsychological model (Fig. 3) indicates the ways in which a signal may be filtered or trans-

## MAIN TOPIC

mitted. This phase is modulated by neurophysiological factors described in the earlier model, and possibly in addition, the complex and ill-understood processes of peripheral and central sensitisation. The perception of pain is then further modulated by a range of factors, including cognitive, affective, and sociocultural elements that become the possible foci of therapeutic interventions.

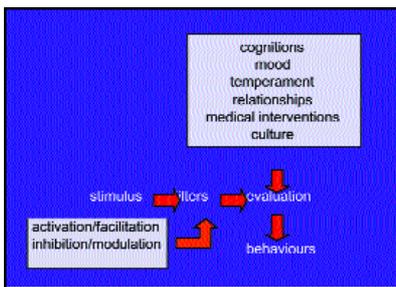


Fig. 3. Chronic pain: a neuropsychological model.

### ASSESSMENT

With regard to practical management, the following differential diagnosis may be considered for chronic pain, conceptualised particularly but not exclusively as a medically unexplained phenomenon, or as a symptom out of proportion to the known underlying pathology:

- an as yet undetermined general medical condition
- a depressive spectrum disorder
- a somatoform disorder
- a psychotic disorder
- a factitious disorder or malingering.

From the preceding comments it should be emphasised that these diagnostic possibilities should not be regarded as mutually exclusive or as distinct categories rather than dimensions. A person suffering from chronic pain as a result of a general medical condition is very likely to be depressed. Dysthymia is a commonly encountered con-

comitant of somatoform disorders.

An underlying general medical condition needs to be continuously borne in mind. Given the uncertainties described, it is inappropriate to prematurely foreclose with a diagnosis made principally by exclusion. The history of psychosomatic medicine is littered with such diagnoses subsequently proven to be unfounded.

Depressive spectrum disorders, most commonly major depressive disorders, dysthymias, anxiety states, and adjustment disorders with depressed mood should not pose difficulties in identification. Problems are most likely to arise when a general medical condition is present, and the important contribution of a mood disorder to the ensuing disability is overlooked.

The diagnosis of a somatoform disorder should not be made simply by the exclusion of a general medical condition. The pain is disproportionate, vaguely described in emotional terminology, constant or deteriorating, resistant to treatment and associated with other similarly vaguely described symptoms in other systems.

The patient in this context is often anxious, depressed, angry and helpless. There is a somatic conviction, with a tendency to dismiss as irrelevant clearly pertinent psychological and social factors. A significant proportion of these patients have a history of sexual and other abuse, a family history of pain, or a tendency within the family to use pain as an idiom of distress. Associated behaviours include increasingly frantic help-seeking from a wide range of sources, the misuse of medication and the resort to alcohol and other over-the-counter putative remedies. These symptoms arise in the psychological and social context of acute and enduring stressors, com-

monly in this country, poverty, unemployment, and the repeated exposure to violence.

Psychotic disorders are more rare, but may present with somatic delusions. This should not pose diagnostic difficulties as other psychotic symptoms and a characteristic history should be in evidence. Factitious disorders, or a factitious component to the presentation are not uncommon, and need to be distinguished from malingering. The problem of malingering may not be made explicit, but as has been mentioned above, the aggrieved patient may assume this is what the clinician believes, in declaring there is no physical basis for the pain, and the escalation of symptoms is an all too likely outcome.

The assessment of a patient presenting with chronic pain therefore requires a detailed history and examination of both the physical and mental status and an evaluation of psychosocial factors that have a bearing on the presentation. Limited, appropriate investigations should serve to clarify the formulation, rather than to allay the anxieties of the clinician or in an attempt to reassure the patient. Possibly under pressure of numbers and time, a tendency to confine attention solely to the physical component of the presentation is restrictive and can entrain a preventable downward spiral to increasing disability. The clinician, faced with the problem of there being no satisfactory explanation for the symptom, by default invokes a psychological explanation. The suggestion of a referral in this context to a psychologist or a psychiatrist is understandably very likely to be resisted.

### TREATMENT (TABLE II)

For these reasons a critical first step in management is for the clini-

cian to acknowledge the patient's symptoms. In the absence of this transaction a therapeutic alliance, which is integral for successful management, is unlikely to be formed. The next step is the systematic identification of perpetuating factors, including pathophysiological mechanisms, cognitions, including misinterpretations, mood states, coping strategies and social stressors. The third step is explaining the formulation to the patient and developing a management plan that targets the particular problem areas that have been identified. This entails the negotiation of suitable goals of treatment: increased activity, the judicious use of medication, restoration of function and an improved quality of life are almost invariably more appropriate and feasible goals than the elimination of pain.<sup>8</sup>

**Table II. Treatment of psychosomatic disorders**

- Acknowledge
- Identify perpetuating factors
- Explain – formulate appropriate goals
- Treat according to identified needs
- Monitor and support

With regard to medication a simple typology of chronic pain (Fig. 4) may serve as a useful guide to treatment. Nociceptive pain indicates tissue damage, neuropathic pain refers to neural damage. Some nociceptive pains through peripheral and central sensitisation become neuropathic pains.<sup>9</sup> A high proportion of chronic pains are unexplained but might have nociceptive and neuropathic components. Low-dose antidepressants in chronic pain have proven efficacy and act independently of their antidepressant properties. Responses are more rapid than for antidepressant action, lower doses are

required, and benefit is gained by patients who are not depressed. Tricyclic antidepressants have been

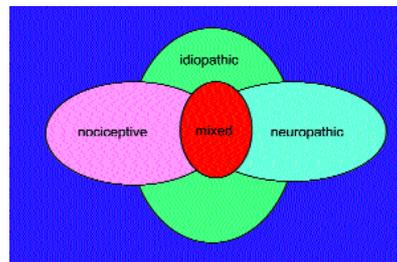


Fig. 4. Types of pain.

the most widely studied agents, but even at low doses effectiveness may be limited by side-effects. Venlafaxine, due to its dual noradrenergic and serotonergic properties, shows promise.<sup>10</sup> Opiates are of doubtful benefit in neuropathic pain, although controversy surrounds the issue. Anticonvulsant agents probably exert their effects through a variety of mechanisms, including modulating excitatory pathways, augmenting inhibitory pathways, and membrane stabilisation through action on sodium and calcium channels.<sup>11</sup> Again, effectiveness has been most extensively demonstrated for the standard anticonvulsants, whereas the newer agents, while having an equivalent efficacy, probably have an improved side-effect profile. The wide range of novel strategies currently being developed for the more effective treatment of chronic pain is beyond the scope of this article.

In addition to the appropriate use of medication the basic techniques of cognitive behavioural therapy should be an integral part of chronic pain management. These techniques are covered in detail elsewhere in this journal, but the basic principle and aim of treatment, the restoration of control, requires emphasis. The last step in management is the careful monitoring of the patient: apart from the benefit of maintaining a supportive alliance, the pathology, and the various maintaining factors, may shift

and require different or modified interventions.

An integrated primary care approach is most appropriate for the effective management of chronic pain. The fragmented nature of tertiary care, and the unlikelihood in this country of truly multidisciplinary pain clinics meeting the needs of the majority of those suffering from pain, reinforce the priority of this level of care. Given the limitations of treatment and the tendency of symptoms to become entrenched with the passage of time such a primary care approach is the most practical and effective way of preventing chronicity.

References available on request.

**IN A NUTSHELL**

Chronic pain represents a massive too often unacknowledged burden to individuals, the health services and the economy. It is most usefully conceptualised as a multi-dimensional, multifactorial, essentially subjective phenomenon.

Acute pain is a virtually universal phenomenon. The prevention of chronic pain is therefore a priority of management.

This requires an awareness of a number of pitfalls, including mind-body dualist assumptions that may form a significant iatrogenic component to the disabilities associated with chronic pain.

The basic principles of management are acknowledging the reality or the validity of the problem, identifying pathophysiological and psychosocial perpetuating factors, targeting treatment to the particular needs of the individual, and continuing practical support and evaluation. Improving the quality of life, avoiding the inappropriate use of medication, and restoring a sense of self-efficacy are more appropriate goals than the elimination of pain.

Effective management involves a paradigm shift from the notion of cure to rehabilitation, and from addressing chronic pain as a symptom with an underlying cause to understanding the phenomenon as a problem in itself.