PSYCHOGENIC RHEUMATISM:
THE MUSCULOSKELETAL EXPRESSION
OF PSYCHONEUROSIS*

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For the development of a psychosomatic disorder there are three requisites: (1) a psychoneurotic predisposition; (2) an exciting emotional conflict, and (3) restriction of outward expression of the conflict. All individuals, whether normal or psychoneurotic, seek relief from the mental suffering occasioned by disturbing life problems. When emotional tension is expended by outward expression, muscular or verbal, all is well. By taking some form of action or doing something about it, the individual "gets it off his chest" and feels better. But if emotional dissipation is constantly restricted, the tension gradually mounts and, in a psychoneurotic type of individual especially, the development of somatic complaints may be the eventual outlet. With the emergence of bodily symptoms the psychoneurotic tends to focus his attention on them, and thereby is partially relieved from his inner mental tension. The psychophysiologic mechanism by which psychic disturbances are displaced into physical symptoms is not fully understood; undoubtedly it is complex. Recent studies suggest that emotions may affect the autonomic nervous system either directly or through the endocrine system, thereby producing increased muscle tension, vasospasm, or metabolic changes in various organs and structures.

Physicians in general are familiar with those functional symptoms or symptom complexes which are expressed in various systems, exclusive of the musculoskeletal system. The idea that structural changes in certain organs may result from psychic disturbances is also being accepted. The following is a partial list of disorders now recognized as psychosomatic: gastrointestinal system—functional dyspepsia, anorexia nervosa, irritable colon, cardiospasm, pylorospasm, certain cases of peptic ulcer and of chronic ulcerative colitis; cardiovascular system—neurocirculatory asthenia, effort syndrome, functional arrhythmias, acrocyanosis, Raynaud's disease, and certain cases of hypertension; respiratory system—certain cases of asthma, allergic rhinitis, and chronic bronchitis; genito-urinary system—enuresis, vaginismus, certain cases of impotence, and dysmenorrhoea; nervous

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system—functional headaches, migraine, hysterical anaesthesia, paraesthesia, paralysis, certain cases of epilepsy and chorea, etc.; skin—certain cases of pruritus, eczema, urticaria, and angioneurotic oedema.

Physicians are not so familiar, however, with the fact that disabilities of the locomotor system frequently result from psychic causes. Too often functional musculoskeletal symptoms are mislabelled as arthritis or some other organic disease. By failing to recognize the true nature of the complaints and by treating the patient for arthritis the physician fosters rather than alleviates the disability. Psychogenic rheumatism may be defined as the musculoskeletal expression of functional disorders, tension states, or psychoneurosis. It implies that such symptoms as pain, aching, stiffness, muscular fatigue, subjective sense of swelling, or limitation of motion may be caused, intensified, or perpetuated by mental influences. The term should be restricted for cases in which the actual disability results from functional symptoms. The usual minor nervous reactions which develop in patients with chronic arthritis should not be included unless the functional overlay grows to the point that it becomes the major incapacitating factor.

Psychogenic rheumatism does not embrace in its concept the idea that organic joint disease may result from mental conflicts. That rheumatoid arthritis may at times be a psychosomatic disease has been suggested, but most authorities agree that psychic disturbances alone cannot cause the disease. Grief, worry, or anxiety may occasionally act as precipitating agents and in some cases appear to be temporally related to fluctuations in the clinical course of rheumatoid arthritis. But while emotional upsets may act as trigger mechanisms to set off the disease process, it is probable that the body must first harbour the causative factor (infectious agent or whatever the factor is). In this sense rheumatoid arthritis cannot be considered as a psychosomatic disease. Actually in our experience, contrary to that of others (Cecil, 1945; Halliday, 1944; Patterson and others, 1943), emotional crises have seldom been related temporally to the onset of rheumatoid arthritis. In a special study (Finney, Boland, and Hench, unpublished) of possible precipitating factors in one hundred soldiers with rheumatoid arthritis an emotional upset was considered as the possible factor in only one instance, much less often than other factors (infection twelve times, physical exposure nine times, joint trauma three times, physical exhaustion twice, etc.).

Incidence

Psychogenic rheumatism must be included among the common rheumatic disorders, along with osteo-arthritis, rheumatoid arthritis, primary fibrositis, and rheumatic fever. Its incidence was appallingly high among soldiers with musculoskeletal incapacities admitted to military general hospitals and special arthritis centres. At such installations medical officers were especially on the lookout for psychogenic disorders, and the incidence of functional symptoms displayed by the muscles and joints was found to be comparable to those demonstrated by other systems, such as the gastrointestinal and cardiovascular. Psychogenic rheumatism was the most frequent cause of disability (34%) in 450 consecutive soldiers with rheumatic complaints admitted to an Army general hospital located in the United States (Boland and Corr, 1943). Previous to admission
such cases had received organic diagnoses, usually arthritis. In a general hospital located overseas Short (1947) found that one-sixth (16.5%) of 309 soldiers with articular complaints were incapacitated by psychogenic rheumatism; an incidence equalling that for osteo-arthritis and exceeded only by that for rheumatoid arthritis. Flind and Barber (1945) reported that in about 42% of patients admitted to a Royal Air Force special rheumatic centre the disability was essentially psychogenic. A statistical variance of interest was that reported by Copeman (1942) at a British general hospital in France, where emotional factors must have been plentiful; 70% of admissions were diagnosed as fibrositis, and no mention was made of functional musculoskeletal complaints. Evaluated in the light of the military experience of others, many of his cases of "fibrositis" must have been suffering from psychogenic rheumatism. At the rheumatism centres of the United States Army approximately one out of every seven soldiers was disabled because of psychogenic rheumatism. It was the second most common diagnosis at the centre at the Army and Navy General Hospital (exceeded only by rheumatoid arthritis) (Boland, Stephens, and Hench, unpublished), and the third most common at the centre at Ashburn General Hospital (being exceeded by rheumatoid arthritis and osteo-arthritis).

The incidence among civilian patients probably is almost as great as among soldiers, although as yet there are very few statistical data. Halliday (1941), working as a medical referee with the insured population of Scotland, found that 39% of 145 consecutive patients labeled as having rheumatism (including fibrositis, lumbago, sciatica, and neuritis) were incapacitated because of psychoneurosis. The incidence of "psychoneurotic rheumatism" was still greater (40 to 60%) when only those on the sick list for two months or over were considered. In a recent statistical survey of 500 consecutive private patients referred to the author because of rheumatic disease, the diagnosis of psychogenic rheumatism was made in 13.4%. Its incidence was less than that for osteo-arthritis (25%), rheumatoid arthritis (23.4%), and primary fibrositis (18.2%), but was far greater than for any of the remaining types. This series contained very few insured patients and no compensation cases.

**Diagnosis and Clinical Picture**

The diagnosis of psychogenic rheumatism is not made merely by excluding organic disease; positive evidence for psychoneurosis must also be established. Diagnosis depends on: (1) absence of organic disease or insufficient disease to account for the disability; (2) qualitative functional characteristics of the disability; (3) positive diagnosis of psychopathology.

**Absence of Organic Disease or Insufficient Disease.**—Psychogenic rheumatism may be divided conveniently into three subtypes: (1) pure—when clinical, laboratory, and radiographic evidence of organic joint disease or muscle abnormalities are lacking; (2) superimposed—when incapacitating psychogenic symptoms are associated with non-disabling organic changes; (3) residual—when disability is perpetuated due to functional symptoms which take over after the disease process itself has subsided. The relative frequency of these subdivisions (among soldiers) based on 1,021 cases of psychogenic rheumatism at the Army Rheumatism Centre, Army and Navy General Hospital, was as follows: pure, 425 (41.6%); superimposed, 404 (39.5%); residual, 192 (18.9%). A similar relative incidence probably occurs with compensation cases, but among private patients the pure type is more common.

Disabling functional complaints are superimposed most frequently on the less serious rheumatic diseases, especially primary fibrositis and osteo-arthritis, diseases which of themselves usually have nuisance value only; rarely are they superimposed
on a serious articular disease such as rheumatoid arthritis. By far the most common association both in civilian and military practice is with fibrositis. This syndrome, which rarely is incapacitating except during acute phases which do not persist indefinitely, may engender chronic invalidism in the psychoneurotic individual. The overlay of functional symptoms may be so intense that ability to carry on may be less than in patients with well-developed rheumatoid arthritis. The differentiation between psychogenic rheumatism and primary fibrositis often is not easy, and when the two conditions coexist attempts to appraise the proportion of the disability caused by each is even more difficult. Another frequent association is with osteo-arthritis. Minimal spurring in the lumbar spine or knees may be accompanied by marked and persistent disability far out of proportion to that usually seen with such changes, especially if the patient is aware of the findings and develops an anxiety reaction to them. Such gross incongruitities between the severity of the symptoms and the structural changes are immediately striking to the experienced physician.

Residual psychogenic rheumatism, in our experience, most frequently follows trauma to the musculoskeletal system; less often does joint disability persist after subsidence of a primary rheumatic disease such as rheumatoid arthritis, rheumatic fever, gout, etc. After some minor injury, the symptoms of which ordinarily would subside in a few days or at most a few weeks, these patients may have intractable symptoms for months or even years. Among soldiers persistent disability following minor back injuries was particularly common; often recovery failed to result even after prolonged rest in bed or immobilization. In such cases a gradual change in the nature of the symptoms usually develops as time goes on. Although the initial symptoms may be typical of organic disease, the complaints eventually assume obvious functional characteristics and associated psychoneurotic manifestations in other systems may appear.

Functional Characteristics of Presenting Disability.—The most common symptoms are “pain”, tenseness, stiffness, limitation of motion, subjective sense of swelling, muscular fatigue, and weakness of an involved part. The complaints more often are generalized, are “all over”, but may predominate in one region or another. Sometimes they are vague in quality and location—“Can’t quite tell you where it is or what it’s like.” Mental distraction at a movie, football game, or social gathering may give temporary relief, and exacerbations with or following episodes of emotional stress or mental fatigue are almost the rule. Pain is practically a universal complaint, but on close questioning often has functional characteristics. It may be fleeting or constant, “bad all the time”, “present day and night”. Salicylates often have no effect, and local heat and other physiotherapeutic measures fail to give relief or “make things worse”. The distribution of pain often is not anatomical; instead of being located in or about joints, for example, it may skip “here, there and elsewhere” with utter disrespect for anatomy. Such sensations as weakness, fatigue, pricking, tingling, numbness, deadness, burning, fullness, and pressure may be interpreted by the patient as pain. On analysis the victim
may not have pain at all in the strict sense, but only paraesthesia. When aching and stiffness are the predominant symptoms, usually they fail to fluctuate with external environmental factors such as weather changes, physical activity, etc. The discomfort in patients with psychogenic rheumatism almost invariably is augmented by use of the involved part.

On physical examination varying degrees of muscle spasm may be found, and, when marked, may be accompanied by limitation of joint motion. A tense, anxious, defensive, or antagonistic attitude is often apparent. On examination the patient may be fearful or resistant, may cry out with pain on palpation or movement of a joint which is apparently normal, may over-react, jump, grimace, or groan on light palpation of the erector spinae muscles, or may grasp the examining hand in protest against being hurt: in general, there is a "touch-me-not" reaction. In soldiers, as in compensation cases, major hysterical conversions as manifested by bizarre limps, gaits, and postures are displayed occasionally (see illustrations, pp. 214–215).

Positive Diagnosis of Psychopathology.—To establish positive evidence for the diagnosis of neurosis is just as important as ruling out organic disease. The functional nature of the presenting complaints, as already discussed, the presence of other psychoneurotic symptoms, the patient's past history and family history of emotional instability, and the presence of an exciting mental conflict, allow this to be accomplished.

Evidence of Coexisting Psychoneurosis.—Associated functional manifestations (headaches, dyspepsia, globus hystericus, sighing respirations, praecordial pains, insomnia, tremors, cold moist hands and feet, anxiety, nervousness, etc.) are present in the majority of cases. Such psychoneurotic complaints were present in forty-six of fifty (92.0%) soldiers with psychogenic rheumatism studied at Hoff General Hospital, and in 179 (89.5%) of 200 cases studied at the Rheumatism Centre, Army and Navy General Hospital. An interesting test was made by Flind and Barber (1945), who submitted seventeen patients with psychogenic rheumatism to a swimming test; all but one had to give up "after a few yards" because "it was too frightening". Weiss (unpublished) attempted to make precise psychiatric diagnoses in forty patients with functional musculoskeletal disabilities; hysteria was diagnosed in sixteen patients, anxiety states in eleven, hypochondriasis in two, psychotic depressions in two, an "underlying neurotic character" without specific classifications in nine.

Psychoneurotic Predisposition.—In practically all instances evidence of previous neurotic traits may be elicited. Such traits present in childhood and persisting to adult life suggest a liability to neurotic reaction under stress. Past histories of enuresis, somnambulism, nightmares, temper tantrums, morbid fears (fear of darkness, of death, or of illness), stammering, fainting spells, etc., are given by many. Boland and Corr (1943) found that approximately one-third of their cases had experienced disabling psychoneurotic or hysterical episodes before the onset of psychogenic rheumatism. These ranged from attempted suicide to interruptions in schooling because of "nervousness".

Halliday (1943) believes that most patients with psychogenic musculoskeletal
disabilities have similar personalities. He pictures them as displaying obsessional trends with self-limitation and restriction of feeling. As children they are said to be shy and in later life are over orderly, punctual, and clean, tending to live quietly—often as "home birds". He contrasts this personality with that found in patients with functional dyspepsia or peptic ulcer, described as showing compulsive drives, over-emphasized activity, efficiency, and independence; being especially susceptible to threats against security and to changes of authority. However, various types of personalities have been found in our patients. Not all of them have "mousy fellows"; some have been dynamic extroverts and others frank exhibitionists, especially those displaying gross hysteria.

Precipitating Emotional Factors.—These are often difficult to ferret out as the patient may be unaware of them himself. Multiple interviews are frequently necessary to elicit the environmental factors or external events which precipitated a deep-seated emotional reaction. Only by following the sequence of happenings before the onset of symptoms can clues be found in some instances; then, once the clue is found, pressing direct questions will often cause the patient to expose the disturbing event or circumstance.

The precipitating factors which cause frustration in civil life are manifold; most of them provoke a sense of grief, rage, or guilt. Hench (in publication) cites a few examples: "a stern parent interfering with a child's social development; an unattractive girl dominated by her protective mother and afraid the boys were passing her by; a person who previously was 'impressed' by her parents and who considered herself 'impressed' by her in-laws; a veteran forced by the housing shortage to live with in-laws (enough to give anyone psychoneurosis!); a common American trouble—'one vacation in ten years'; sexual impotence of the patient or the marital partner; June-December marriages; a spinster who had given up marriage to care for her mother, whom she had thereafter unconsciously come to hate; fear of an unfaithful, drunken husband; a patient whose relative died of 'rheumatism' and who feared that his own rheumatism might also be fatal".

Among military personnel additional factors existed to induce anxiety. These included: (1) the loss of security or love caused by separation from a wife, family, or home; (2) the loss of ability to control one's personal destiny; (3) resentment at authority, especially when such is invested in those felt to be inferior; (4) fear of bodily harm; (5) confusion resulting from strange surroundings, crowding, regimentation, and competition; (6) the concern for the safety and financial well-being of dependents; (7) indignation over lack of promotion; and (8) worry over fidelity of wife or fiancée.

Psychopathology.—Weiss regards "smoldering resentment" to be the common basic psychopathology in psychogenic rheumatism. He pictures resentment as breeding chronic discontent and a feeling of rebellion. But the outward display of rebellion is inhibited for one reason or another, such as filial respect or fear of authority. The continuous sense of hostility, according to his concept, prevents the patient from relaxing, with the result that constant muscle tension develops which leads to symptoms of aching, tenseness, and muscular fatigue. Regardless of the underlying psychologic mechanism, the somatic effect of chronic muscle spasm appears plausible. This can be appreciated by most physicians who have experienced muscular aching and fatigue after periods of prolonged nervous tension.
PSYCHOGENIC RHEUMATISM

Localization of Symptoms

It is interesting to speculate why the psychoneurotic individual may subconsciously choose the musculoskeletal system for expression of somatic symptoms. In most instances fixation is probably prompted by past or present experiences, or by expediency. In cases of superimposed and residual psychogenic rheumatism a present or immediately preceding example of a type of disability is suggested to the patient. In cases of pure psychogenic rheumatism such examples, though not as direct, may be found also. In one-third of our patients (Boland and Corr, 1943) examples of arthritic invalidism were present in the immediate families; and approximately two-thirds gave a history, recent or remote, of traumatic or inflammatory joint disease in their past lives. Had examples of stomach trouble existed instead, it is probable that some form of functional dyspepsia rather than psychogenic rheumatism would have developed in response to the same emotional stresses.

The back and lower extremities were the favoured sites for localization of the predominant complaints in soldiers. Boland and Corr found that in thirty-eight of fifty soldiers (76%) the predominant symptoms were located in these regions. They suggested that this election of somatic fixation bore an expedient relationship to the attempted solution of an emotional conflict, "as these structures are synonymous with marching and soldiering".

Differential Diagnosis

Primary fibrositis is the principal rheumatic condition from which psychogenic rheumatism must be distinguished. In both conditions the diagnosis is based largely on the qualitative characteristics of subjective complaints, and differentiation may require a detailed analysis of the symptoms. Hench and Boland (1946) have listed the chief points which allow these two syndromes to be differentiated. The accompanying table is adopted from their summary.

Terminology

The term psychogenic rheumatism has not suited all rheumatologists and psychiatrists. Some (Weiss, unpublished) contend that the word rheumatism is too vague and already is surrounded by enough opprobrium without linking the word psychogenic to it. But functional muscle and joint complaints are often vague too, and the word psychogenic at least points to the origin of the symptoms. The word psychosomatic is objectionable because more and more it is being used to imply that actual organic changes are caused directly by mental influences. Whereas, this may be true in certain structures, evidence does not support those who suggest that certain common organic joint diseases may represent psychosomatic disorders. Psychiatrists prefer to use psychiatric diagnoses based on underlying psychologic processes to catalogue the musculoskeletal symptoms, using such terms as anxiety-depressive state, conversion hysteria, hypochondriasis, etc. However, internists and orthopaedists cannot be expected to be trained psychiatrists, any more than psychiatrists can be expected to be trained rheumatologists. In practice the diagnosis of functional disease starts by recognizing that the complaints and findings do not conform with those found in organic disease. The first tip-off is the qualitative characteristics of the bodily symptoms; exploration of psychologic deviations come later. Designations such as "psychoneurosis", "anxiety state, as manifested by musculoskeletal symptoms", etc., may be more accurate but are cumbersome. Although objectionable to some, the term "psychogenic rheumatism" is
Convenient and compact; if its limitations are understood it can serve as a useful label, at least until a better one comes along. It matters little if some object to the name as long as they accept the fact that not all aches and pains in and about muscles and joints are due to organic disease of these structures.

**Differentiating Points Between Psychogenic Rheumatism and Primary Fibrositis**

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<tr>
<th>Patient’s attitude</th>
<th>Psychogenic Rheumatism</th>
<th>Primary Fibrositis</th>
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<td></td>
<td>Tense, apprehensive, “subjective”, often antagonistic or defensive.</td>
<td>Usually “objective” and co-operative.</td>
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<td>Chief symptoms</td>
<td>Often vague. On analysis “pain” may consist of such sensations as burning, tightness, fullness, numbness, weakness, tingling pressure, or “queer feeling”. Muscles and joints may be “tense” rather than stiff.</td>
<td>Usually definite. Consist of aching, soreness and stiffness.</td>
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<tr>
<td>Factors influencing symptoms</td>
<td>Symptoms, in general, fluctuate with changes in internal or mental environment: tend to be worse during or following emotional stress, and temporarily relieved by mental distraction (theatre, social gathering, football game, etc.).</td>
<td>Symptoms fluctuate with changes in external or physical environment: made worse by physical inactivity and damp weather, and ameliorated by dry warm weather, physical activity, local heat, etc.</td>
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<td>Degree of disability</td>
<td>Variable but may be severe and always disproportionate to physical findings. Disability may be greater than with serious joint disease.</td>
<td>Usually not marked—symptoms are a “nuisance” to patient.</td>
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<td>Constancy of complaints</td>
<td>Tend to be constant, “bad all the time” or “getting worse”. Exercise almost always aggravated.</td>
<td>Subject to exacerbations and remissions; may last days or weeks, then disappear. Intensity varies during day; worse in morning and after physical inactivity, better after mild exercise.</td>
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<td>Location of symptoms</td>
<td>Often not anatomical, may “skip here, there, and everywhere”.</td>
<td>Anatomical. If symptoms migrate they do so with respect for anatomy of joints and muscles.</td>
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<tr>
<td>Response to examination</td>
<td>Patient often over-reacts, is tense, and resistant; a general “touch-me-not” attitude.</td>
<td>Co-operative. Pain and tenderness are consistent, and mental distraction is without effect.</td>
</tr>
<tr>
<td>Response to treatment</td>
<td>Variable, but often nothing relieves. Salicylates frequently are ineffective and local heat may make worse; alcoholic beverages relieve temporarily.</td>
<td>Temporary relief from salicylates, local heat, and other physiotherapy.</td>
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<tr>
<td>Associated functional complaints</td>
<td>Almost invariably present, i.e., nervousness, tremulousness, cold, moist hands, insomnia, globus hystericus, headaches, sighing respirations, bizarre postures and limps, etc.</td>
<td>Usual minimal or absent.</td>
</tr>
<tr>
<td>Positive evidence of psychopathology</td>
<td>Present, i.e., psychoneurotic predisposition, precipitating emotional conflict, underlying resentment or frustration, coexisting anxiety, depressive, hypochondriacal or hysterical reaction, etc.</td>
<td>Usually absent.</td>
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REFERENCES

—, Stephens, C. A. L. Jr.; and Hench, P. S. (To be published.)
Finney, J. O., Boland, E. W., and Hench, P. S. (In publication.)

(For Illustrations to this Article see pages 214 and 215)
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