

Soft Tissue Rheumatic Pain:

Recognition, Management,
Prevention

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PREFACE

The need for a textbook of soft tissue rheumatism was perceived because responsibility for medical care for these disorders is diverse. These patients receive care from neurosurgeons, industrial physicians, orthopedists, rheumatologists, internists, generalists, osteopathic physicians, psychologists, physical therapists, or anesthesiologists. Many patients also seek relief from faith healers, charlatans, and others. The literature is similarly diffused; we have drawn our material from wide-ranging sources across the broad health field.

We spent the better part of a year deciding which disorders to include. Although many might argue over our selection, we have attempted to provide a meaningful working text of soft tissue rheumatic diseases; most have stood the test of time. Although objective determinants are often lacking, a constellation of characteristic signs and symptoms can be noted; more importantly, aggravating factors that can precipitate many of these conditions are known and described for each condition. The clinician can prevent recurrences if he is aware of these and gives this information to the patient.

These conditions often overlap or compound one another and the physician can feel overwhelmed by the myriad of complaints presented by these patients. Simple history-taking methods and physical examination maneuvers that reproduce the symptoms and aid in diagnosis are provided. Proper treatment that results in benefit to the patient further corroborates the diagnosis.

The continental approach with emphasis on enthesitis-enthesopathy (inflammation or disorders of the muscular or tendinous region of attachment to bone) has not yet added significantly to our understanding of these disorders; therefore, we have not categorized the disorders by that method. Rather, we approached the conditions by body regions because most patients with soft tissue pain disorders present with limited local complaints.

The textbook begins with a basic guide to diagnosis and manage-

ment found in the Introduction. Often, diagnosis depends on the art rather than the science of practice. We have provided a technique for history and physical examination that can be used whenever soft tissue rheumatic pain is suspected. Because a favorable response to treatment may be important to corroborate a diagnosis, we have provided a detailed six-point management program in the Introduction. Further specific recommendations are then amplified for each condition in the chapters that follow.

The soft tissue pain disorders for each body region are then described in subsequent chapters. Approximately 150 entities are described. These disorders, beginning with the temporomandibular joint dysfunction syndrome and carotidynia and ending with the entrapment neuropathies of the foot, can be readily managed in an outpatient setting with an informed physician and a patient motivated to recover. We have provided a description of each disorder, possible etiologies, aggravating factors, and physical findings or maneuvers that aid in diagnosis, recommended laboratory and roentgenographic tests, and specific management recommendations. We further provide an expected outcome and additional suggestions if symptoms persist.

The problem of chronic persistent pain is presented in Chapter 13. Some of the current speculations on causation, including an update on the gate control theory, psychosocial factors, and a review of some of the pain management tools including oral drugs, transcutaneous nerve stimulators, biofeedback training, and acupuncture are described. (Spinal manipulation and the use of pain clinics are discussed in Chapter 7, "The Low Back and Pelvis.") The fibrositis syndrome was allotted a separate chapter.

Sites for local injection utilizing an anesthetic and a crystalline steroid suspension are described in each chapter where appropriate. In Chapter 14, the technique, indications, contraindications, and hazards associated with using these agents are discussed.

Physical therapy and exercise are perhaps the most important management factors, and are certainly more important than oral drug therapy. Chapter 15, "The Exercise Plan," discusses musculoskeletal flexibility, goals of therapeutic exercise, types of exercise, the pace of exercise, and adjuncts to the exercise plan.

Our purpose is to provide the reader with a textbook of disorders broadly considered as soft tissue rheumatic pain disorders; to provide useful descriptors and characteristic maneuvers that reproduce many of the syndromes; and to strongly emphasize those aggravating factors that often lead to recurrences. Treatment and prevention are available and often useful; they are rarely expensive, prolonged, or unsafe.

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Perhaps the first description of soft tissue rheumatism should be ascribed to Hippocrates' description of the Scythians as "so loose-jointed that they were unable to draw a bowstring or hurl a javelin."*

Arthur Scherbel, M.D. of the Rheumatology Department, Cleveland Clinic, played a major role in igniting the interest of one of us (RPS) in these often ignored areas. Significant practical diagnostic and therapeutic modalities based on experience were gleaned from many colleagues over the years, including Drs. Allan Kirsner, Robert Finkel, Stephen Farber, Robert Gosling, Richard Baer, and numerous orthopedists, physical therapists, and patients.

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R.P.S.
R.W.M.
V.M.G.

CONTENTS

Introduction:	An Overview of Diagnosis and Management ...	1
	<i>Impact of Musculoskeletal Pain on Society ...</i>	3
	<i>Recognition of Myofascial Soft Tissue Pain ..</i>	6
	<i>Six Points for Managing Myofascial Soft Tissue Pain</i>	8
Chapter 1:	The Head and Neck	13
	<i>Temporomandibular Joint Dysfunction Syndrome</i>	13
	<i>Vascular Neck and Face Pain (Carotidynia) ..</i>	18
	<i>Cervical Fibrositis (The Cervical Syndrome) ..</i>	21
	<i>Impingement of the Fifth Cervical Nerve Root</i>	26
	<i>Cervicothoracic Interspinous Bursitis</i>	28
	<i>Muscle Contraction Headache</i>	28
	<i>Occipital Neuralgia</i>	31
Chapter 2:	The Thoracic Outlet Region	33
	<i>The Thoracic Outlet and Related Syndromes ..</i>	33
	<i>Reflex Sympathetic Dystrophy (RSD)</i>	44
	<i>Pancoast's Syndrome</i>	46
Chapter 3:	The Shoulder Girdle Region	50
	<i>Musculotendinous Rotator Cuff Disorders ...</i>	56
	<i>Frozen Shoulder (Adhesive Capsulitis)</i>	69
	<i>Scapular Region Disorders</i>	74
	<i>Other Shoulder Region Disorders</i>	76
Chapter 4:	The Elbow	81
	<i>Tennis Elbow</i>	82
	<i>Olecranon Bursitis</i>	87

	<i>Non-Olecranon Bursitis</i>	89
	<i>Tendinitis</i>	90
	<i>Nerve Entrapment Syndromes</i>	90
Chapter 5:	<i>The Wrist and Hand</i>	93
	<i>Disorders of the Lower Arm and Wrist</i>	93
	<i>Systemic Diseases Affecting the Wrist and Hand</i>	96
	<i>Hypermobility Syndrome</i>	96
	<i>Disorders of the Thumb</i>	99
	<i>Disorders of the Palm and Fingers</i>	101
	<i>Dorsal Edema of Secretan</i>	104
	<i>Nerve Entrapment Disorders of the Wrist and Hand</i>	105
	<i>Neurovascular Disorders of the Wrist and Hand</i>	108
	<i>Nodules</i>	110
	<i>Ganglia</i>	112
Chapter 6:	<i>The Thoracic Cage and Dorsal Spine Region</i> ...	115
	<i>Myofascial Chest Wall Syndromes</i>	117
	<i>Tietze's Syndrome</i>	124
	<i>Juvenile Kyphosis (Scheuermann's Disease)</i> ..	125
	<i>Osteoporosis and Osteomalacia (Osteopenia)</i> .	128
	<i>Herniated Dorsal Intervertebral Disc</i>	131
Chapter 7:	<i>The Low Back and Pelvis</i>	135
	<i>Pathophysiology of Low Back Pain</i>	136
	<i>Mechanical Low Back Pain</i>	138
	<i>Sciatica</i>	140
	<i>Myofascial Back Pain</i>	142
	<i>Psychogenic Back Pain</i>	144
	<i>History and Physical Examination</i>	146
	<i>Pain Syndromes of the Pelvis</i>	165
Chapter 8:	<i>The Pelvis and Thigh Region</i>	172
	<i>Myofascial Pain Syndromes</i>	176
	<i>Bursitis</i>	178
	<i>Entrapment Neuropathies</i>	180
Chapter 9:	<i>The Knee</i>	185
	<i>Quadriceps Mechanism Derangement</i>	190
	<i>Disturbances of the Patella</i>	193
	<i>Bursitis about the Knee</i>	196
	<i>Popliteal Cyst (Baker's Cyst)</i>	198
	<i>Miscellaneous Disorders of the Knee</i>	202

Chapter 10: The Foreleg Region	206
<i>Shin Splints</i>	206
<i>Other Leg Pain and Dysfunction</i>	207
<i>Nodules</i>	211
Chapter 11: The Ankle and Foot	213
<i>Soft Tissue Injury of the Ankle</i>	216
<i>Heel Pain</i>	219
<i>Plantar Fasciitis</i>	221
<i>Midfoot and Metatarsal Pain</i>	222
<i>Flexible Flatfeet</i>	228
<i>Toe Disorders</i>	231
<i>Entrapment Neuropathies</i>	234
<i>Night Cramps</i>	238
Chapter 12: Fibrositis Syndrome	241
Chapter 13: Chronic Persistent Pain	253
<i>Myofascial Pain</i>	253
<i>Gate Control Theory Updated</i>	254
<i>Psychologic Factors in Chronic Pain</i>	255
<i>Anti-Pain Modalities</i>	256
Chapter 14: Soft Tissue Injection	264
<i>Indications</i>	265
<i>Contraindications</i>	265
<i>Hazards</i>	266
<i>Technique</i>	269
Chapter 15: The Exercise Plan	272
<i>Goals of Therapeutic Exercise</i>	273
<i>Evaluation for an Exercise Plan</i>	273
<i>The Type of Exercise</i>	273
<i>Adjuncts to an Exercise Program</i>	275
Appendix of Illustrations	277
<i>Sites for Injection</i>	278
<i>Therapeutic Exercises</i>	282
Index	289

AN OVERVIEW OF DIAGNOSIS AND MANAGEMENT

This is a “What it is” and “How to treat it” book. The conditions discussed include localized disease problems that result from trauma, spasm, inflammation, degeneration, or congenital abnormalities. Included among the many entities discussed are tendinitis, bursitis, fasciitis, carpal tunnel and other nerve entrapment syndromes, disc and low back syndromes, other structural derangements of the musculoskeletal system, myofascial pain, and the fibrositis syndrome.

We have tried to detail each disorder or syndrome as the patients commonly present to the physician. Aggravating factors are stressed. Specific well-defined methods of management are given where available. In those entities where specific therapy is unavailable, empirical modes of treatment that appear to be effective and safe are described. In many cases treatment regimens may require extensive patient education and cooperation; therefore, we have tried to present an expected outcome. However, if further care is needed, guidelines are provided for additional diagnostic procedures and therapy. Most patients with these entities respond well to treatment if all the steps outlined are considered. A common mistake is to provide only one or two therapeutic modalities when a more comprehensive program is necessary. Furthermore, several causative mechanisms may coexist and must be discerned; therefore, the clinician must be thorough in his evaluation of the patient.

The pathogenesis of many of these disorders is poorly understood. The chapter on chronic pain (Chapt. 13) discusses a theoretic role for the central nervous system in any chronic pain state. The skeptical physician will find little objective data discussed in certain areas.

Prospective studies are hampered by the simultaneous occurrence of several disorders in one patient, with each contributing many variables to the problem.

Over 150 painful and disabling musculoskeletal disorders are described. No doubt, experienced physicians could add many more to those we have presented. For example:

*Back-pocket sciatica is caused by pressure on the sciatic nerve in the gluteal region [Gould]. We now record another related neuromuscular condition, ponderous-purse disease in shoulder-purseuses. Both disorders are highly sex-limited, back-pocket sciatica to men and ponderous-purse disease to women, although the latter can affect men of certain habit.

Ponderous-purse disease is manifest by pain, tenderness and spasm in upper shoulder and lateral neck muscles, especially trapezius, supraspinatus and rhomboideus, and is sometimes accompanied by radicular pains.

The pathogenic mechanism is neuromuscular. Constant contraction of the shoulder elevator and neck stabilizer muscles attempting to carry the load on the side of the shouldered purse results in pain, tenderness and focal spasms of those muscles. The muscle contractions can cause abnormal neck posture and provocation of cervical nerve radiculopathy. An informal assay of a series of feminine purse weights and contents revealed weights up to 5 kg. and internal milieus that can modestly and summarily, for the uninitiated, be pursimoniously likened to the contents of a goat's stomach. The profligate-credit-card factor and coins-for-coin-eating-machines factor are links with back-pocket sciatica, but the instruments, bottles, boxes, tubes, jars, packets, and spray cans of material necessary for natural beauty are unique to ponderous purses.

Prevention of ponderous-purse disease is so logical that to point it out may be considered purscilious. The physician's advice has almost no patient pursuance. An unfavored but sometimes patient-tried remedy is contralateral shifting of the shoulder purse, usually followed by contralateralling of the pain and needless pursponement of the cure. Switching to a hand-held purse is subjectively objectionable and objectively often complicated by purse partings, with resulting hot pursuits, purspirations and panic

from loss of beauty aids (and credit cards). Another approach, reduction of the shoulder purse contents, is apparently more of a pain in the neck than the pain in the neck.

And so, like hookworms in unsanitary societies who won't wear shoes, ponderous-purse disease appears destined to remain endemic in ours.

One of our colleagues has labeled these disorders "wastebasket rheumatism"!* In our ignorance of the pathogenesis of many of the persistent musculoskeletal pain syndromes, classification has been difficult. "Nonarticular (soft tissue) rheumatism is a term embracing a large group of miscellaneous conditions with a common denominator of musculoskeletal pain and stiffness."¹

Although systemic diseases can produce similar syndromes, we hope the physician will gain confidence in the early recognition and treatment of a *primary* soft tissue rheumatic pain disorder, thus preventing the establishment of a chronic pain-spasm-pain cycle.

The reader is encouraged to review the regional anatomy related to the syndromes described. Knowledge of anatomy and muscle function will aid the clinician in diagnosis and therapy of soft tissue rheumatism. The functional anatomy of the locomotor system is well described in Rene Cailliet's monograph, *Soft Tissue Pain and Disability*.² The reader is also encouraged to use an anatomy book or atlas as a companion to our text.

IMPACT OF MUSCULOSKELETAL PAIN ON SOCIETY

Musculoskeletal disorders, including soft tissue rheumatic pain disorders, are among the leading causes of time lost from work, and a major reason for disability payments in the United States. One third of these disabled persons are younger than 45 years of age. Chronic "medical absences from work" due to musculoskeletal disorders exceed medical absences due to circulatory, mental, and neoplastic disorders combined. Of the five leading diseases causing disability, four involve the musculoskeletal system.³ The prevalence of musculoskeletal disorders has increased 24% in the past decade.⁴ Of visits to practitioners of medicine, 15 to 25% are estimated to be due to complaints related to the musculoskeletal system.⁵ The Mayo Clinic's Department of Physical Medicine reports that 30% of visits were the result of soft tissue musculoskeletal disorders.⁶ Hopefully, early recognition of these disorders, recognition and avoidance of aggravating factors, and treatment will have a significant impact on the financial and emotional exhaustion that these patients experience.

*Courtesy of Allan B. Kirsner, M.D.

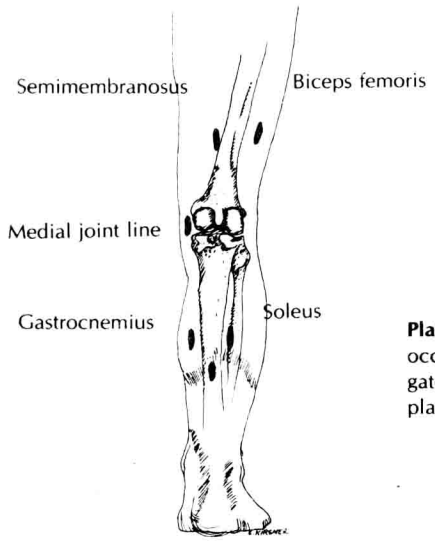
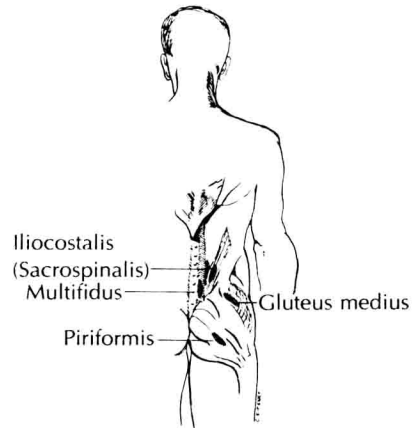
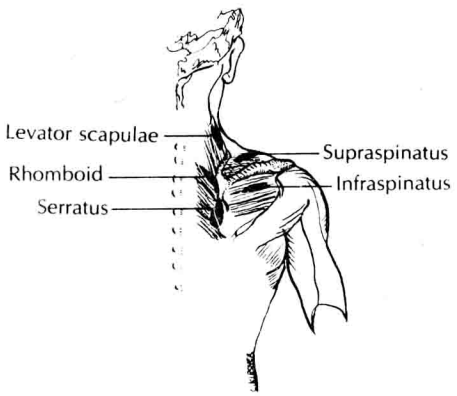
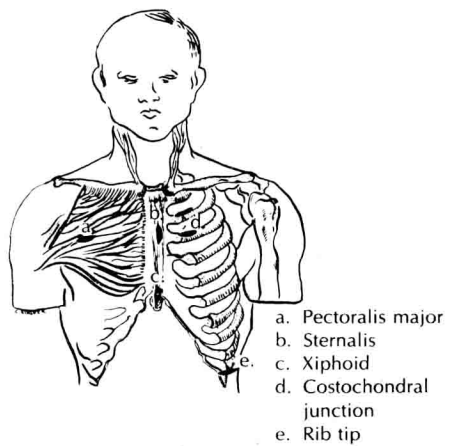
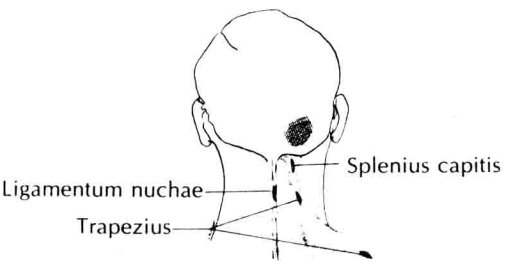


Plate I: Myofascial trigger points. These usually occur as an indurated, firm, palpable, tender, elongated band in muscle, or less commonly in a fascial plane.

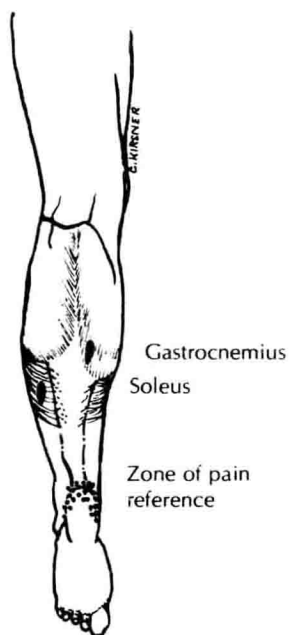
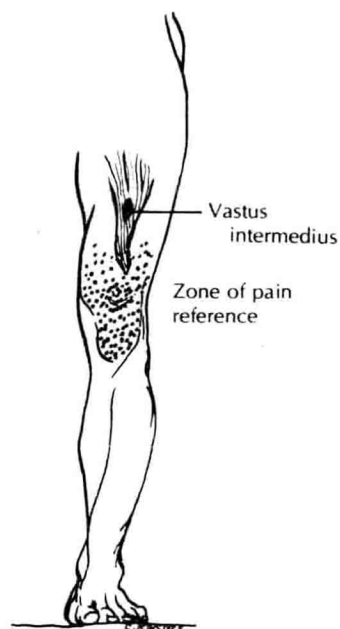
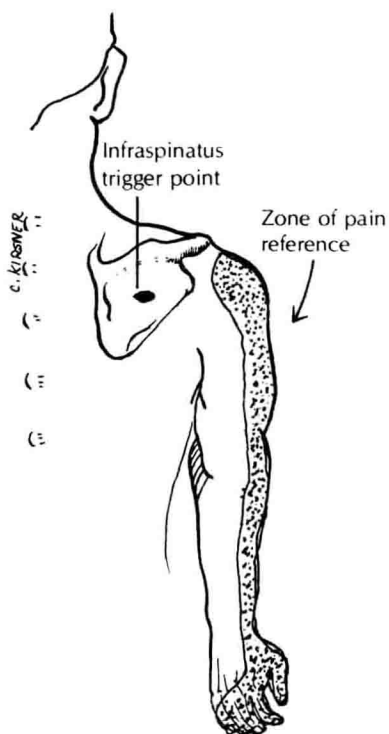


Plate II: Zones of reference. Upon palpation of the trigger point, pain is produced in a target area or at some distance away. The zone of reference is characteristic for each trigger point.

RECOGNITION OF MYOFASCIAL SOFT TISSUE PAIN

Recognition and management of myofascial pain is an art as well as a science. The term "myofascial pain" implies regional musculoskeletal pain accompanying a *trigger zone*. The trigger zone, or *trigger point*, is a palpable, tender, indurated portion of muscle or fascia. Palpating the trigger zone causes pain in a target area or *zone of reference*, which may be within the same muscle bundle or at some distance.⁷⁻⁹ (Plates I, II). The trigger zone may result from acute trauma or minor injury, repeated minor microtrauma of daily living, or chronic strain from sedentary living habits. Myofascial trigger points may also occur in systemic inflammatory disorders or infections. Visible swelling is rare. Travell⁸ and Bonica⁹ popularized trigger point identification and suggested that chronicity often resulted from a pain-spasm-pain cycle (see Chapt. 13).

Myofascial pain recognition requires that the clinician discern what pain the patient is experiencing throughout the day and night. The pain quality (aching, burning, numbness, throbbing) must be elicited; the physician should not prejudge the severity of the patient's pain.¹⁰ Objective swelling must be distinguished from a *sensation* of swelling. Is "swelling" limited to a joint area, is it periarticular, or more diffuse? Is motion impaired, and if so, is the limited motion constant or intermittent?

What precipitating events preceded the pain? These may include injury from overstretching, a direct blow to the body, repetitive activity or prolonged inactivity from driving long distances or performing prolonged sedentary tasks. What therapeutic endeavors were tried by the patient and with what results?

The patient's general condition must be considered. Evaluation of the condition should proceed in an orderly, logical manner. Localized syndromes may reflect local limited areas of disease. Many local disorders result from "misuse injury."¹¹ Similar manifestations may result from a systemic disorder or may be drug-induced (e.g., drug lupus, serum sickness). If a systemic disease process is present, the physician must consider whether it is the cause of myofascial pain or coincidental. A comprehensive examination includes body development, posture, gait, movement, motivation, and emotional status in addition to the usual evaluation.¹²⁻¹³ (Fig. 1).

The physical examination of patients with nonarticular rheumatism includes special maneuvers unique to defining the syndromes described in this book. Each chapter describes the performance of these essential clinical tests; these tests often reproduce the symptoms.

The examining physician should observe the patient while sitting, when rising from a chair, or while bending and walking. In this manner, structural disorders can be recognized. Laying on of hands to

palpate tender, indurated, trigger points of muscle, to determine joint passive range of movement, or to elicit joint hypermobility is particularly important. Careful joint palpation for synovial thickening or synovial effusion is essential to detect these subtle manifestations of various connective tissue diseases.

The diagnosis of myofascial origin of pain can be compared to the diagnosis of migraine headaches. The physician must first learn the specific features of such headaches. A careful history of the quality, location, and duration of the headache must be elicited. Associated characteristic symptoms include visual scotomata, nausea and vomiting, transient neurologic deficits, and personality features that occur with sufficient frequency to be recognized as a syndrome called



Fig. 1. The clinician observes the heavy breasts, improper brassiere with tight straps, heavy arms, forward sloping shoulder, and forward inclination of the neck. The patient is a good candidate for thoracic outlet syndrome, cervical fibrositis, or muscle contraction headaches.