

Peripheral Neurology:

Case Studies in Electrodiagnosis

Jay A. Liveson, MD

Edition 2, 1991

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Beauty is said to lie in the eye of the beholder. Similarly the utility of a book lies in the perspective of the reader. In the Preface, the author suggests that this text is addressed to the physician who performs electrodiagnosis tests to enable her/him to "plan and interpret"; adding "It is also for those who don't perform the tests but who must rely on them for clinical decisions . . . to refer and interpret".

This is the second edition of **Peripheral Neurology: Case Studies in Electrodiagnosis** written by Dr. Liveson, without the coauthorship of Dr. Spielholz as in the first edition. It is again usefully organized into two parts; the first covering the fundamental concepts of electrodiagnosis, the clinical and electro-physiological findings of diffuse and localized disease processes affecting the neuroaxis in three chapters. The second part of the book comprises ninety-five cases.

Terms used in electrodiagnostic peripheral neurology covering motor and sensory conduction and needle electromyography are defined and discussed in chapter 1. The pathology of anterior horn cells, roots, nerves, neuromuscular junctions and muscles are succinctly covered under Diffuse Processes in chapter 2. Chapter 3 is organized as a reference source for physicians evaluating localized lesions: the individual clinical syndromes are described, the published electrodiagnostic data summarized and the possible underlying causes reviewed. The isolated neurological lesions examined include those affecting the median, anterior interosseous, ulnar and radial nerves, the brachial plexus and cervical radiculopathy. The cauda equina and conus medullaris, the femoral, sciatic, peroneal, and tibial nerves; the lateral cutaneous nerve of the thigh; and the lumbosacral plexus, are discussed. Cranial nerves VII and XI and the electromyography of muscles supplied by other cranial nerves receive concise treatment.

The structure of the book gives the reader the opportunity to utilize the cases presented in Part 2 as a test of the knowledge gleaned from the discussions in Part 1. The format of the cases is particularly useful; each case is presented and questions are posed by the author initially with respect to the clinical aspects. Short, 'bottom-line' answers are provided. This approach is designed to help the reader formulate a plan of diagnostic studies indicated and to organize an interpretation of the data collected. The author offers his own plan which attempts not only to examine the abnormal region but to delimit the extent of the pathology. This is predicated upon the author's contention that "... methodology is not as important as clear and inquisitive reasoning". The results of the Case Electrodiagnostic Examination are given and questions again posed with respect to the findings; specific answers are provided apropos the Electrodiagnostic Interpretation, Followup and Significance. References to related cases found elsewhere in the book are given.

The user-friendliness of the book is greatly enhanced by the use of many clear diagrams in both Parts 1 and 2. The diagrams include schematics reviewing the anatomy in the first part and the extremity

involved in most of the cases with depiction of the lesion site, other sites electrodiagnostically sampled and diagrams of other regions associated with the pathology or problem. Diagrams depicting autonomous innervation for both the upper and lower extremities are also included.

Ostensibly this book would appear to be a reference text for the neurologist and a programmed or case-study text/reference for the neurology resident. However, the usefulness to all involved in the undergraduate education of chiropractors, medical practitioners and other primary contact health care providers is not recognized or is, at least, understated by the author. While the detailed electrodiagnostic data provided for each case may not be of specific interest to the primary practitioner, the general principles involved certainly may be. The cases presented, questions posed and answers given in the first part of each case provide a rich source of problem-based learning material. Of particular interest to chiropractors is the numerous mentions of the 'double-crush syndrome' produced from a cervical radiculopathy in conjunction with the clinically presenting peripheral pathology.

The great value of this 476 page text lies in the 95 cases it offers in Part 2 which reinforce the brief but comprehensive foundation provided in Part 1. For the primary contact practitioner the book provides an easily comprehensible way to review the basic concepts of peripheral neurology and to refine clinical skills. To the educator its' applicability to both didactic and problem-based learning situations, as well as for self-study, is noteworthy.

The extensive number of References (over 1900) enhances the face validity of the book. Its' value is expanded by the inclusion of a Suggested Syllabus and a Bibliography. An Appendix of Diagnoses and a comprehensive Index facilitates the teaching and/or learning of specific problems.

The second edition of **Peripheral Neurology: Case Studies in Electrodiagnosis** is a highly recommended book for those interested in the clinical and/or electrodiagnostic aspects of peripheral neurology, including clinicians from general practitioners to specialists. Undergraduate and postgraduate educators, as well as researchers, may find this book a very useful addition to their respective libraries.

In summary, the utility of Dr. Liveson's work is high and really lies in the perspective of the beholder - the reader.

Colin Crawford B App Sc - Chiropractic (Phillip)

Department of Diagnostic Sciences

Phillip Institute of Technology

Fundamentals of Chiropractic Diagnosis and Management

Edited by Dana J. Lawrence, DC

586 pages; hard cover,

Baltimore, Maryland: Williams & Wilkins, 1991. \$82.00 (US)

After almost a century since chiropractic was discovered, it is still difficult to find a well written scientifically based reference book for the practicing chiropractor. **Fundamentals of Chiropractic Diagnosis and Management**, edited by Dana J. Lawrence is a pleasant surprise. As mentioned in the preface of this book, it was designed to provide

information of a fundamental nature concerning diagnosis and management of conditions that a chiropractor might reasonably expect to encounter in his office. During the course of its 586 pages, it attempts, quite successfully, to touch on all the different systems of the human body and their related disorders.

This book is divided into seventeen chapters. Most of these chapters deal with either a particular system, such as; skeletal, musculoskeletal, neurological, renal and endocrine, or specific disorders of different origin such as; hematological, dermatological, gastrointestinal, cardiovascular, upper respiratory tract, pediatric and nutritional.

Its first chapter commences with a brief history of the chiropractic profession, while the second chapter begins by clearly defining terms and concepts in reference to biomechanics, with emphasis given to the spine. The remaining chapters, three to fourteen, discuss the fundamental aspects of a variety of disorders that may be encountered in the general practice of chiropractic. Accordingly, these chapters discuss the etiology, symptomatology, diagnosis and treatment strategies for patients with those disorders. There is also a chapter on lower extremity inequality, which focuses on several different causes, as well as the significance of unilateral postural lower extremity deficiency. While the last two chapters deal with pediatric disorders and nutritional disorders, respectively.

If this first edition is intended as a reference book for the practicing chiropractor, then, from this reviewer's point of view, the essential considerations are the usefulness and the accuracy of the information assembled in this book. Unfortunately, the chapters on "Gastrointestinal Disorders and Pediatric Disorders" are questionable with respect to the recommended chiropractic treatment and have been poorly referenced. For instance, in the chapter on "Gastrointestinal Disorders", too often the author uses two textbooks published in the early and late twenties as references, which are regrettably outdated. In addition, in the chapter on "Pediatric Disorders", the author has omitted to include his sources of reference regarding the recommended chiropractic treatment. Due to the poor nature of empirical extrapolation, any claims that have not been experimentally validated should be addressed with caution.

Nevertheless, the overall content of this book is relevant to the intended goal, that is to provide information of a fundamental nature regarding diagnosis and management of various disorders.

In summary, the book has three particular properties that are contributing to the overall presentation. First, it is written in an enjoyable manner. Secondly, its reasonably large number of references, 842 to be exact, plus 221 figures and 87 tables contribute to a well organized and presented volume. Finally, it provides some answers concerning the diagnosis and treatment strategies for a wide variety of different disorders. This book is definitely an asset for the chiropractor with a particular interest in the broader scope of the practice of chiropractic.

Joe Lemire, BSc, DC
Clinical Resident I
CMCC

Backache, second edition

Ian Macnab and John McCulloch

Williams and Wilkins

428 East Preston Street

Baltimore, Maryland, 21202, USA

ISBN 0-683-05352-3

It is estimated that treatment of low back pain costs the United States Workers' Compensation Board alone, approximately \$14 billion dollars a year. Undoubtedly, back injuries continue to be a very common problem in today's society and must put a significant strain on the health care system. It thus behooves the providers of health care to be well acquainted with the common afflictions which produce back pain so that appropriate measures of intervention can be taken early on in the course of the disorder, thus avoiding unnecessary diagnostic procedures and ineffective therapeutic measures.

Macnab and McCulloch's **Backache** is a text which can help professionals who frequently deal with this costly ailment to reach the above mentioned goal. It is an impressive looking 448 page hard cover text with glossy leaf and reader-friendly type face. It contains numerous diagrams and photographs of diagnostic imaging films including plain radiographs, computed tomography (CT) and magnetic resonance imaging (MRI). The diagrams are very simple and uncomplicated line drawings which are clear, concise and easy to understand. In various photographs, however, although the authors themselves state that the book was not intended to be a radiological atlas, it is difficult to see the areas of interest clearly.

The text covers a wide spectrum of conditions which cause or may present with back pain. These topics range from non-organic or psychogenic back pain, to spondylogenic/discogenic pain, to tumor and infection. Scoliosis, however, is not a covered topic, but the authors acknowledge that idiopathic scoliosis is not usually symptomatic, and that entire texts can and have been devoted to this condition alone. Because idiopathic scoliosis is most often asymptomatic, the authors warn that a child who presents with a painful scoliosis should be investigated for other causes of their backache such as tumors or infections.

The variety of topics which are covered in the text, for the most part, are done so without excessive detail. Descriptions are relatively brief, clear and concise. Unlike some books, which may describe a particular topic in numerous pages of text, this more concise method of presentation does not tax the reader's attention span and keeps his/her interest. This seems to give the text a smoother flow. If one wants more information on a particular subject of interest, the text is well referenced.

Because of the wide spectrum of low back disorders described, this text is useful to a variety of health care providers who deal with back pain. Although some chapters are more surgically oriented, the emphasis is not on discussing intricate surgical procedures but more so on discussing preoperative testing procedures, indications for surgery and post-operative care. These are things which should also be of interest to the more clinical practitioner. A good portion of the text is devoted to back pain of discogenic origin, a topic which is at the forefront of discussions concerning low back pain today.

The authors emphasize clinical presentation, a thorough patient

history and physical examination, devoting a full chapter to each of the latter two areas. They also discuss the importance of current diagnostic investigatory procedures such as CT and MRI and stress the value of correlating these tests with the patient history and physical signs, before surgical intervention is proposed. Basic principles of the medical approach to the treatment of low back pain are also stressed.

Other conservative treatment modalities are also discussed. Some, in more brevity than others. If this text is lacking in anything, this may be the area. Although the text is directed to a more medically oriented audience, it is felt that a little more than two or three paragraphs should be devoted to spinal manipulative therapy. One should be made aware that there is a difference between spinal manipulative therapy and spinal mobilization. What the authors are describing is the latter. No mention is made regarding spinal manipulative therapy as performed by chiropractors. This is a subject which should be included in a third edition, if one looms in the future. This should be done in recognition of the growing scientific literature to support its usefulness, and also in recognition that chiropractic is the next largest primary contact health care discipline, second only to medicine, that deals primarily with back pain and uses spinal manipulation as its primary form of treatment.

Overall, my impression of this text is a favourable one and I would not hesitate to recommend it to any health care professional or student who deals with or intends to deal with the large number of patients who suffer from backache.

Philip A. Decina, DC
Clinical Resident IV CMCC

Photographic Manual of Regional Orthopaedics and Neurologic Tests – Second Edition
Joseph J. Cipriano
Williams & Wilkins, 1991
428 East Preston Street
Baltimore, Maryland, 21202, USA
ISBN 0-683-01701-2

The second edition of the **Photographic Manual of Regional Orthopaedics and Neurologic Tests** is an attractive looking 277 page text with clear black and white photographs and concise diagrams laid out on glossy leaf. The text is easily legible, well organized and has a user-friendly index. Despite these positive features, the content of the text is scant in its interpretation of various procedures and somewhat lacking in substance. There are also inaccuracies in description and interpretation of certain testing procedures. However, new additions to the text add to its value.

The author has included a section on neurologic evaluation, the use of the inclinometer (which has been shown to be both a reliable and valid instrument) in assessing range of motion, additional tests to screen for possible vertebral insufficiency and a flow chart at the beginning of each chapter. This reviewer, however, does not find the flow charts to be very useful, and in fact, at times do more to confuse the reader instead of achieving the author's stated aim of helping the clinician follow a logical examination pattern in order to expediently arrive at a

diagnosis. Also, in addition to assessment of vertebral circulation the author does not mention that with tests involving neck rotation and hyperextension, there exists controversy in the literature concerning which vertebral artery, that is, ipsilateral or contralateral, is compromised. This is particularly evident at the C1-C2 vertebral level and is paramount in the interpretation of these tests.

The author has described a multitude of examination procedures. However, there are some significant tests which are not mentioned. For example the prone knee flexion provocative test originally described by Herron and Pheasant in the journal *Spine* in 1980, for which a positive outcome is indicative of a herniated nucleus pulposus with nerve root entrapment. Other significant tests which are not mentioned include the lateral pivot shift for anterolateral knee instability and the elevated arm stress test (EAST) for upper limb neurovascular bundle compression, to name a few.

As mentioned earlier, the text also contains inaccuracies in statements of fact and description or interpretation of various tests. The author states that the vestibular portion of the eighth cranial nerve is tested by evaluating the patient's hearing, when in fact it is the cochlear portion of the eighth cranial nerve that is tested. The description of the Lachman's test for anterior cruciate ligament insufficiency is not consistent with the original description of the test by Torg in 1976, where the anterior cruciate ligament integrity is assessed with the knee in 20-30 degrees of knee flexion. Other inaccuracies arise with the description of a test indicative of medial epicondylitis and the procedure used to assess the superficial abdominal reflexes.

Besides the above mentioned criticisms, this reviewer's major concern is with the multitude of eponyms that this text contains. Granted, credit should be given where credit is due. However, one may easily forget what a test means, what it is used for, or how it is performed if it is named after an individual alone. It would be more useful to name a test in such a way that the description, purpose or intent of the test is inherent in its name. This may promote better understanding and long-term retention of the testing procedure in question. Good examples of this include the "supraspinatus tendonitis test", "foraminal compression test", and the "patella grinding test", to name a few. It is this reviewer's opinion that this type of renaming by structure should be applied to all tests instead of being referred to by eponyms. It is understood that this would be a major undertaking, but one that would be well worth the effort and one that future health professionals would benefit from as we strive for the use of standard terminology.

Although I commend the author for his efforts, my overall impression of this text is not a favourable one for the above mentioned reasons. There are other texts available that provide either students of orthopaedics or clinicians more detail and precision for orthopaedic examination.

Philip A. Decina, DC
Clinical Resident IV, CMCC