Cerebellar stimulation in man.—I.S. Cooper (Ed.) (Raven, New York, 1978, 222 p., U.S. $ 22.50)

Chronic electrical stimulation of the surface of the cerebellum through implanted electrodes in humans was initiated in 1972 by I.S. Cooper in attempts to employ the inhibitory properties of the cerebellum for treating intractable epilepsy and certain disorders of posture and movement. When the procedure was initiated, there was evidence from animal experiments that a number of motor functions could be altered by electrical stimulation of the cerebellum, including decerebrate rigidity and experimentally induced epilepsy in animals. The procedure has become highly controversial, in part because of disagreements concerning the physiological basis for the use of cerebellar stimulation, but also because of contradictory findings on the efficacy of this procedure and lack of agreement on the untoward effects of stimulation through these electrodes.

Interested individuals have been hoping for a balanced, objective evaluation of the efficacy of this procedure in carefully studied patients, hopefully with double blind controls and cross-over studies. Unfortunately the present work does not provide this kind of information. The book contains a collection of papers providing information on the results of electrical stimulation of the cerebellum in patients with epilepsy and cerebral palsy studied only by Cooper and his colleagues. Individuals with contradictory points of view and different experience were not asked to participate. The book begins with a chapter reviewing basic aspects of chronic electrical stimulation of the cerebellum and then moves into some technical considerations of the procedure. Chapter III is a useful report on the results of cerebellar stimulation in attempts to control epilepsy in 32 patients. Chapter IV contains comments upon the findings in neurophysiological studies of patients with implanted cerebellar electrodes. Chapter V presents the results of chronic electrical stimulation of the cerebellum in patients with cerebral palsy. There are subsequent chapters on the neurophysiological aspects of spasticity with cerebellar stimulation, an investigation involving studies of gait during electrical stimulation of the cerebellum, some pathological observations from patients with implanted electrodes, certain behavioral observations, and a couple of chapters concerning electrical stimulation devices that may be available in the future.

The aim of this volume as stated in the preface is to determine whether chronic cerebellar stimulation is useful in selected cases of cerebral palsy and epilepsy and if so, to describe the neurological abnormalities in which it is useful. Another aim is a disclosure of the risks entailed in the procedure. This book presents a one-sided view of the answers to these questions. For example, the negative study of Van Buren and his colleagues in patients with epilepsy has not been presented or even discussed. The neuropathological effects of cerebellar electrode implantation and stimulation are stated to be negligible but this contradicts substantial animal experimentation and recent findings in humans with implanted electrodes studied neuropathologically in medical centers other than those related to the present investigators. Consequently, the book presents a strongly one-sided point of view indicating the efficacy of the procedure, pointing out some of the pitfalls but not providing a balanced view of the positive and negative aspects of this procedure. This is unfortunate, particularly since these articles have not been subjected to scrutiny through the peer review mechanism but rather published uncritically with only the investigators involved in the project reviewing their own findings together.

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Books received, but not fully reviewed:


This little book contains the account of a severely retarded child who never lost his capacity to respond to people and whose parents, the authors, never gave up on him. In the narrative diary entries and letters, their engaging account will make interesting reading for all physicians dealing with this type of patient.


This book deals with the phenomena of visual motion perception — the ways the visual system constructs descriptions of the environment in terms of three-dimensional space and their motion through space on the basis of the changing image reaching the eye. The approach is computational and theoretical and therefore this book will be of interest only to