The direction of scratch test

I read with interest the letter by Dr Motoi et al on the use of "direction of scratch" test in the assessment of posterior column dysfunction. They correlated the number of errors in the scratch test with central conduction times in somatosensory evoked potentials with vibration perception thresholds, demonstrating correlation coefficients of 0.56 and 0.34 respectively (p < 0.01). This led them to conclude that the scratch test could be "recommended as a simple and yet reliable clinical neuro- logical examination for detecting posterior column dysfunction".

In Hankey and Edis' original description of the sign, they defined a clearly abnormal test as 3 or more errors out of 10. Applying this definition to Motoi et al's data for central conduction times, the predictive value for a positive test is only 60% (that is, 60% with an abnormal scratch test will have abnormal central conduction times). Conversely, the predictive value for a negative test is 80% (that is, 80% with a normal scratch test will have normal central conduction times). These figures cast some doubts on the usefulness of this test for clinical assessment of posterior column function.

Predictive values for the scratch test could not be calculated for vibration perception thresholds as Motoi et al did not provide a normal range. It would be of interest to have this information.

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Recovery of function following a lesion in the central nervous system has always been an enigma to the Neurologist. The phenomenon is important because if the mechanisms of recovery were understood, not only would the mode of organization of the central nervous system be clearer, but opportunities for aiding this recovery would become more likely. In the 1960's the concept that following partial denervation the undamaged central nervous system would react in such a way that unused or little used pathways would become more effective was first suggested, on the basis of experimental studies, together with the corollary that part of the clinical picture seen after a lesion in the central nervous system was, in fact, due to the reaction of the intact central nervous system. This implied that the problem of rehabilitation of patients with chronic neurological deficit should be via active "re-education" of the intact nervous system and moved rehabilitation away from the management or treatment of complications which arise as a result of dysfunction.

The phenomena of sprouting of new synapses, unmasking of silent synapses, and alteration of receptive fields, have altered our view. By the late 1970's and early 1980's restorative neurology was established. There may be earlier claims for the coining of the term "restorative neurology" but it was Dimitrijevic who defined it as a branch of neurological sciences concerned with active procedures applied to the impaired nervous system in order to modify abnormal neuro-control. Since that time there has been an increasing interest in neuromodulation of the nervous system using physical or chemical stimulation and other methods to alter neurological function. The field is something of a departure from conventional neurological treatment. Although very accurate diagnosis is essential, the emphasis in restorative neurology has always been on trying to assess the neuropathological state as accurately as possible.

The interests encompass those of the basic scientist interested in plasticity of the nervous system, engineers involved in computer modelling, the Neurologist and Neurosurgeon involved in the function of the nervous system, the Anaesthetist with an interest in pain, and even the Vascular Surgeon and Cardiologist interested in the effect of neuromodulation outside the central nervous system.

In this excellent book, the editors Delwaide and Young define restorative neurology as a subspeciality of neurology dealing with "techniques and strategies used to restore a disordered nervous system to a state of optimal function" and they stress the wide ranging interests and specialities of this field, and the need for integrating this knowledge into daily practice. The two books together will serve as an invaluable source of general and practical information on experimental animal models of a variety of human neurological diseases. Despite its high price of £60.00 it is likely to be highly valued by neuroscientists.

BOOK REVIEWS

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BOOK REVIEWS: Principles and Practice of Restorative Neurology.

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