

are clear and there is a good index. There are few misprints, but figures 8.1 and 8.2 have been transposed over their respective legends.

This book presents an interesting, though somewhat disjointed survey of different aspects of the neurogenic bladder. It does not set out to cover the field comprehensively, and a balance between the clinical and experimental aspects is not always achieved. However, in focussing attention on recent advances and outstanding problems, it should prove stimulating to all who are concerned in the management of this challenging condition.

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ABSTRACTS FROM OTHER JOURNALS

PERCUTANEOUS ELECTRICAL CORDOTOMY IN RELIEF OF INTRACTABLE PAIN: LIPTON, S. (1968). *Br. med. J.* **1**, 210.

This appears to be the first publication in Britain on percutaneous cordotomy for intractable pain. A stereotaxic technique using modifications of the methods of Mullan and of Rosomoff was used in 52 patients. The best way to produce the lesion in the anterolateral tract, at the atlanto-axial level, was by using a radio-frequency current, after electrical stimulation was carried out to confirm correct placement of the electrode in the spinal cord.

The author claims that this method of treatment is a much lesser surgical procedure than open operative cordotomy; also, compared to the latter procedure there is less morbidity and mortality, and a shorter period of convalescence.

Forty-four patients had 52 unilateral cordotomies, 30 with relief of pain, and 4 with partial relief; 2 failed and required open surgery, 2 had retention of urine and 2 had transient paresis.

In the 8 patients with bilateral cordotomies, there were 17 percutaneous operations. Five had relief of pain, and 3 partial relief, 2 had bladder paralysis and one arm paresis.

No details are given of the levels and areas of analgesia achieved; and no information is given about the spinal cord lesions produced in those patients who died (most had serious progressive malignant disease)—that is information about the precise site and size of the radiofrequency lesion.

SOMATOTOPIC REPRESENTATION OF THE RESPIRATORY PATHWAYS IN THE CERVICAL CORD OF MAN: HITCHCOCK, E. & LEECE, B. (1967). *J Neurosurg.* **27**, 320.

This important paper is based on a careful pre- and post-operative study in 14 patients who required high cervical cordotomy for intractable pain. Pulmonary function tests were carried out—vital capacity, forced expiratory volume, peak expiratory flow and radiological assessment of diaphragmatic excursion. Automatic respiration appears to be mediated through the reticulo-spinal pathways which lie in the antero-lateral aspect of the cervical spinal cord. The authors suggest that fractional cervical cordotomy can result in satisfactory analgesia without injuring the respiratory pathways.

The relevance of this work in relation to patients with cervical spinal cord damage is important, and the authors stress the situation where the patient can breathe by voluntary effort but has no rhythmic automatic respiration; and mention that the conception of

two distinct pathways is a satisfactory explanation for certain patients dying in their sleep following high cervical cordotomy—and presumably following high cervical cord damage due to other causes.

THORACIC INTERVERTEBRAL DISC PROTRUSIONS WITH SPINAL CORD COMPRESSION: REEVES, D. L. & BROWN, H. A. (1968). *J. Neurosurg.* 27, 24.

The authors review the literature concerning these lesions and emphasise the difficulties in diagnosis, both from the clinical and radiological standpoints. They report two personal cases which confirm these problems and describe posterior and postero-lateral operative approaches. As with other reported series, to date, the poor results of treatment are described with post-operative paraplegia as a not uncommon complication.

The abstracter would wish to recommend an anterior operation for these benign, but strategically placed lesions, either transthoracic or combined transthoracic and transabdominal, depending on the level of the disc protrusion. In this way, the offending disc protrusion may be completely excised, without risk of further compromising spinal cord function.

TUMOURS OF THE LOWER SPINAL CORD ASSOCIATED WITH INCREASED INTRACRANIAL PRESSURE AND PAPILLOEDEMA: ARZENI, C. & MARETSIS, M. (1967). *J. Neurosurg.* 27, 105.

From many points of view there are close associations between intraspinal and intracranial disorders and this is well exemplified by the occurrence of a communicating type of hydrocephalus in certain patients with spinal cord tumours, and in particular ependymomas of the conus medullaris. The authors describe three patients and describe previously reported cases (including that of the abstracter: *Develop. med. child. neurol.* (1962), 1, 270). It appears that protein transudate from the neoplasm affects C.S.F. absorption, and results also in an individual reactive progressive cranial basal chronic adhesive arachnoiditis with resulting hydrocephalus.

NEUROLOGY IN ORTHOPAEDICS. By PAUL H. SANDIFER. Pp. 63. (1967). London: Butterworths. 16s.

Paraplegia is a multidisciplinary aspect of medicine, and this, the last work of the late Dr. Sandifer, lucidly demonstrates the close association between two of these disciplines, neurology and orthopaedics. The orthopaedic surgeon may be the first specialist to see patients with conditions such as ataxia, polyneuritis, and spinal cord and nerve root compression and traction—e.g. progressive foot deformity due to spinal dysrhaphism.

This small volume is to be recommended to orthopaedic surgeons, medical and surgical neurology being an important part of their training and practice.

PHILLIP HARRIS.